

015859-4.ST25.2008-12-10.SEQ LISTING

SEQUENCE LISTING

<110> Mata Lopez, Pedro
Mozas Alonso, Pilar
Pocovi Mieras, Miguel
Tejedor Hernandez, Diego
Mallen Perez, Miguel
Alonso Karlezi, Alberto
Reyes Leal, Gilbert
Castillo Fernandez, Sergio
Martinez Martinez, Antoni

<120> Method for detecting LDL receptor gene mutations associated with

<130> U 015859-4

<140> 10/542,937

<141> 2006-09-08

<160> 259

<150> ES200300206

<151> 28.01.03

<150> ES200302671

<151> 17.11.03

<210> 1

<211> 60.000

<212> polynu

<213> human

<220>

<221> gene

<223> rLDI

<400>

aaaagatgtt gtatccattc aatggaacat tattggcct taaaaggaa ggaaattctc 60
actgagcata gtggttatg cctgtaatcc cagcacttg ggaggctgag gcagggggga 120
ggggcggtt cacctgaggt caggagttca agaccgcct ggccaacatg gtgaaatccc 180
gtctctacta aaaatacaca 300
aaaatttagcc gagtggttgc gcacacac 240
ctacacggg 360
gactgaggca ggagaatcgc tggacccgg gaggcagagg ctgcagagag 300
ccgagattgc gtcactgcac tccagcctgg gtgacagagc gagactctg tctaaaaaa 360
aaaaagaagg aaggaaaggaa ggaaggaagg aagttctgac acaggctcca acacagatgt 420
tatgctcagt gaaataagcc agacatgaaa ggacaaatac tgcctgatct cattcataag 480
aggtccctag aattgttagaa tgggtgtgc cacggctgg gaggggggtt ggccagagtt 540
tcagttggg aagttagaa tggctggag atggatggcg gtgtgttgc ttgcacaact 600
gtgtgaatgc gcttaatgcc tctgaattgt gcagttacaa gtggctgga tggccgggc 660
gcggtgtgtc atgcctgtaa tcccagcact ttgggaggcc gaggcaggtg gatcatgaga 720
tcaggagatc gagaccatcc tggctaacac ggtgaaaccc catctact aaaaataca 780
aaaaatttagc caggcatggt ggtgggcacc tggctggg aggcggaggg 840
aggagaatgg cgtgaacacg ggaggcagaa ctggcgtga gcccagatca cgccactgca 900

015859-4.ST25.2008-12-10.SEQ LISTING

015859-4.ST25.2008-12-10.SEQ LISTING

ttctccct taatcacaca ggtaatccat acatacgaca ttctttttt ttttgacac 3660
ggagtcctac tctgtcacct aggctggagt gcagtggcgc aatctggct cactgcaacc 3720
tctgcctccc aggtcaagc aattctccctg cctcagccctc ctgagtagct gggattacag 3780
gtaaccatca ccacacctgg ctaaattttg tatttttagt agagacgggg ttccaccacg 3840
ttggccacgc tggattgaa ctccctggctt caagtatct tcctgtctcg gtctccgaa 3900
gtgctggat tacaggaatg agccactgtg cccggccaat acgacatctg tgcaatgaag 3960
tgcaacatata aagacaccct tccccccaccc actgccccca ccaccggccc cacgccccca 4020
cccccatctc cagatcagaa cctggggctg tgcaattta aacggtttag ccacttgcta 4080
cttgggttagt tgaagttcag tctcagccag gttggagtcc tggactctgg cccctcttt 4140
atttttattt ttatattttt ttgagacag agtctcgctc tgcgcccag actggagcgc 4200
agtggcgcga tctcgctca ctgcaagctc tgccctctga gttcacccca ttccccggcc 4260
tcagcctccc gagcagctgg gactacaggg ccccgccacc acaccggct aatttcttg 4320
attttttagt agagatgggg ttccaccctg ttagccagga tggcttagat ttccctgacct 4380
tatgatccgc ctgcctcggg cctcccaaag tgctggatg acaggagtga gccaccgcgc 4440
ccggcctttt ttttttttt tagacagtct ctgtcacccca ggctagatg cgatggcgc 4500
atctcggtc actgcaacct ccacccctgg gttcaagcg attctcctgc ctcagccctcc 4560
tgagtatctg ggattacagg tgccctgtgac cacggccggc tgattttgtt attttagta 4620
gagacggggtt ttcaccacat tggcaggct agcctcaaacc tcctgacccca gtatccctc 4680
cgccctcagcc tcccaaagtgt ctgggattac aggactctgg cccatctgg ctgctgcca 4740
tgtccctcct tctatctgg ttttccaca gttacgcaca tgccagataa cggcgagct 4800
gttccccagc aactgcaacg gatctgccc ccactggaa atggaagacc ttgcagccca 4860
ggttttgtt gaccaagatt agattgtggt caacaaacac ctgaccctgg ccttttggaaac 4920
catcagccat gtcagctaaa ataaaagcag aatctggctg ggccgcgtgg ctcacgcctg 4980
taatcccaagc actttgggg gctgaggtgg gcagaccacc tgaggccgg cggtcttagac 5040
cagcctgacc aatatgtga aacccctgtct ctactaaaca tacaaaattt agctggccat 5100
ggtggcgggc acctgtatacc ccagctactc gggaggctga ggaaggagaa ttgcttgaac 5160
ctggaggca gaggttgcag tgagccgaga ttgcgcact gcactccaaact ctggactgca 5220
gaacaagact ctgtccaaa agcagataaa taaaaataaa taaaaataaa aatatggccg 5280
ggcatggtgg ctcacacccctg taatcccaac actggaaaga tgaggccggc agatcacgag 5340
gtcagggtt cggccatgtat ctgcgtgcct gtaatcccaag ctactctgg ggctgaggca 5460
ggagaatcgc ttcatccgg gaggtggagc ttgcagttag ctgagatcgc gccactgcac 5520
tctagcctgg gcaaaaagact gagactccat cgcaagaaaa aaaaaaaaaa aagctgcaag 5580
ctctgtctcc cgggttcaag tgattctct gcctcagccct tccaagttagc taggattata 5640
cgcccccgc accatgcctg gctaattttt gtatttttag tagagatcgc gtttccat 5700
gtggccagg ctggctcaa actcctgacc tcacgtgatc cacctgcctc ggcctccag 5760
agtgcgtggta ttacaggtgt gaacccctgc gcctggccaa gaaaagtgc ttgaatgaag 5820
agtaaataga agacccagaa agaaatgattt cgtcccgagga aggtcacaga agcaacgtaa 5880
tcaagatgga aatctgactc ttccataattt tgccagact tcccatccct ccaaagcttt 5940
ccagactctt ccagatcattt cttagatattt ccagaaatca ttctgtggaaat ctaacttagga 6000
gtagtcgtta aacaatgtgt ttcacacaga tacaattcat aaacgatgag aagacaagga 6060
cacitcatga atgaaatttt tacggccggg tatgtggct cacgcctata atcccgaggac 6120
tttggaaagac ccaggcagga ggattgcctg agtccaggag ttcaagacca gtctggccca 6180
catagtgaga ccctgtcgct acaaaaaattt taaaaatttag gtagatatgg tgggttatgc 6240
ctctagttt agctttttt gaggctgaag caggaggatc tcttgagccc aggaggttga 6300

015859-4.ST25.2008-12-10.SEQ LISTING

gctgcaatga gctacgattg aactactaca ctccagtcg ggtgacagag aaagaggctg 6360
cctcaaaaaa ataaaaataaa aaaaataagg ccggacgcgg tggctcacgc ctgtaatccc 6420
agcacttgg gaggctgggg tggcagacc acgaggtcag gagatcgagg ccatcctggc 6480
caacatgatg aaaccctgtc tctactgaaa acacaaaaat tagctggcg tggggcgta 6540
tacctgtaat cccagctact cgggaggctg aggcaggaga atcactgaa ccagggagtc 6600
agaggtgca gcgagaggag attgtgccac tgcattccag cctggcaaca gagcaagact 6660
ccgtctcaaa aaagaaacaa caacagcaac aacaacaaaa aaaacataaa aaagttcggg 6720
cacggtggt cacacctgtc atcccagcac ttgggaggc caagggggt agatctctg 6780
aggtcaggag ttcaagacca gcctggccaa caaacatgt gaaacccgt ctctactaaa 6840
aatacaaaaa gtagccgggt gtatcccag ctactcgaa ggctgaggca ggagaatcgc 6900
ttcaacctgg gagatggaag ttgcagtgaa ctgagattgc gccactgggt gacagagtaa 6960
gactcttgc tcaaaaaaaa aaaaagaaaag aaagttaat ttaatgattc aaataatgac 7020
ctgctcgaga gataaatata aagtctaacg taagaggtgt atacttttc ctctgcctg 7080
ctgtcctcgc cccaccctac cccaaagtccc aacctgattt atcagtctcc ttccctctg 7140
gtagccccac tcccatgacc gaaccgagaa gtcatgcacc cgcataagaa ctctaattt 7200
tttttcaaa gtcttcac tgcccaaaa atagtttctt tcatctccag gggatgtgaa 7260
agtgtcttc ccaattttt ttcaacctcc cagcgttcca cacatatgcc ttgcctcagc 7320
cagcttcac ttagtgc tttccaccc ggcgtgctc ctacctcgaa aaatctgtc 7380
catccatagt ctgatttctg ttgtccaga acattcttt tttttccccc tggAACATTc 7440
ttaagatac ctcaataaaat gaaaccagag ggtatagacg agtataatg ggtactacaa 7500
tgtacagggg gaaatggagg ggaatatgat atactctcct ccttgatata gcttagaatg 7560
ttctagaagg atatgctaa aaggtagca gcctggccaa ggcgtgtgg ctcacgcctg 7620
taatctcagc acttgggat gccaacgcgg acggatcaca aggtcaggag ttctagatca 7680
gcctgaccaa tatagtgaaa cctcatctt actaaaaata caaaaattag cgggtacgg 7740
tggcatgtgc ctgttagtccc agtactttg gAACCTGAGG caggagaatc gcttgaactc 7800
gggaggcaga ggttgcagtg agccgagact gtgcattgc actgcagcct ggggtgacaga 7860
acaggactcc gtcctaaaaa aaaacaaaaa aggtcagcag tcttaattgt cagagggcag 7920
gggacctgca tggatggag ttttccat gtgtccaccc tttgagccct tttgctttt 7980
tttttaaat cttttattt tagcaaaaata gatataaaat ttacccttt ttttttgag 8040
acagggtctc actctgtgc ccaggttggc gtgcagtggc atgatcttgc ctcactgcag 8100
cctctgcctc ctgggttcaa gcgtttcc tgcctcagcc tcccgagtag ctgggattac 8160
aggtgctgc caccataccc ggctaaattt gtatttttag tagagacggg gttacgccaa 8820
gttggccaaat ctggcgccaa actcctgacc tcaagtgcac cggcccccgc ggcctcccaa 8280
agtgcgtgggat ttacaggcag gagccaccac gtcagccctt aaaatttacc atattaacca 8340
tttcaagtt cagaggcatt aaagtataact cacatttttgc ttcaactgtc accactactc 8400
acctgcagaa gtttttcattc ttgcaaagtg aaaacccat acccaatttc cggcttcc 8460
tctcagcccc tggtaatcac tatttttactt ttgttactt ttgttatga atttgcctat 8520
tctaggacccat aatagaagtg gagtcaacc tttttgtccct tttgtggctg gcttatttca 8580
cccgccctta tatcctcaag gttttccat ttggaggat ggctgaattt cttgtttttt 8640
aaggctaaat ttattttat tatatttataa tgcatattt tgtttatccat gatggacact 8700
tgggttgatt ccaccccttgg ccattttgaa gaagcttcta tgcatttttgc atacacat 8760
atctttgggt ctgtccttc aatgttttg gggatatttc agatgtggaa ttctggatt 8820
ataaggcaat ttttttttt gagacagact ctgcgttgc tgcggccaggc tagaatgtgg 8880
tgggtgtgatc tattttttt ttgttttgc gatggaggctc cgctctgtcg cccaggctgg 8940
agtgcgtgtt cacgatctca gtcactgca agtccgcctt cccaggttgc tgcatttttgc 9000

015859-4.ST25.2008-12-10.SEQ LISTING

atgcctcagc ctcccaagta gctgggacca cagccgccca ccacccacc cggtaattt 9060
ttgtatttt agtagagaca gggtttcaact atgtggcca ggtatggtctc gatctcctga 9120
cctcgatc cgcctgcctc ggctcccaa aagtgcggg ttacaggcgt gagccactgc 9180
acccggctgg tggatcttgc gctcgctca acctctgcct cccaggttca agcgatttt 9240
gtgcctcagc ctctcccgag ctgggactac aggtgtgcgc cactgtgccc agctacttt 9300
taaaaaatata tggatattt ttatacttt aagttctggg atacatgtac agaacgtgca 9360
gttttggtac ataggtatac atgtgccatg gtgggttgct gcacccatca accggcgtatc 9420
tacatttaggt atttctccatc atgtatccc ttccctagcc ctccactctc ccgggttttt 9480
gttttggtttt gtttgggtt gtagagacag ggttcacca ttgtgcccag 9540
gctagtcctg aactcctgac ctcaagtatc cccgcctccaa aagtgcggg 9600
attacaggtg tgacccacta cactcgccct tatttcact tatttatgca attttcacta 9660
ttgctatattt cttaggaggca ctgtggaattt gcactgtgga atttttagtat tgctgtattt 9720
cagcaagcca tgaggtctgt cagcacacgg ctggggcat ttgtgaaga taactgtatc 9780
cagctgagcc aaggcagggtt cctgattcca cccactggca ggcacccgagg tctctgctgt 9840
tactgtatgtt ttctctgtgg attgtatggc ttaaggccag accacagctg caatggctca 9900
cctctgccaa aggccaggct ctgtggggca gagacattt ccggactgag cctcctgggt 9960
aatttagagag gtagaaaaatgggaggacggg ggcagggtggg ctattacagc gagaaaaatg 10020
cccacccctga gttgtatttag ataacttgg gagttcagga actttccaat aaagtgggtt 10080
ccacagcagg attacttact gactccctaa tagaaagaag gcaggcacag gcccggcgt 10140
ttggctcatg tctgtatcc cagcacgttgg gggggctgatc cacaaggatca 10200
ggagatccag accatccctgg ctaacaaagt gaaacccctgt ctctactaaa aataaaaaaa 10260
attaggctgg gctgtgtggc tcgtgcctgt aatcccagca ctggggagg ctgaggcggg 10320
cgatcacga ggtcaggaga tcgagaccgtt cctggctaa acggtaaaac cccatctcta 10380
ctaaacatac aaaaaaaaaat tagccagggtt tgggggggg cgcctgtatc cccagctact 10440
caggaggctg aggccaggaga gtgggtgtgaa ctggggaggc gcagctgca gtggccgg 10500
actgcgcac tgcactcccg cctggggcaac agacagagac tccgtctaa aaaaaaaaaa 10560
aaaaaaaaataca aaaaaatttgc caggcgtggt ggcacgtgca cgtgactgtatc gtcccgatca 10620
cttggggaggc tgaggcagga gaatttttg aacccggggag acggagggtt cagtggccg 10680
agatcgccacttcc agcctgggtt acagagctatc actccgtcaa aaaacaaaaaa 10740
acaaaaaaaca aaaaaacaaa aaaaaaaaaa cagcaggaaac tggcaggatc tccctgaaga 10800
gataaaaaaaa aaaaaatgc gttgcaacac aaaagcagcc acagagaaaa gcaaaccat 10860
atatggtatttattatgcac cgagtgtggc tctaattact tttttttttt taatttgagag 10920
acagccctggc tctgttgattt gggctggagt gcagttggcgc gaccgtatc cattgcagcc 10980
tcaacccctt tggctcaagc aatccctcta cctcagccctc ctgtgtatc gggaccacag 11040
gtgtgagcca ccacccctgg ctaattttttt tttttttttt tgtagagaca gggatctact 11100
atgtggccca ggctgtttc caactccctgg gctcaagtatc tcccccacc tctgcctccc 11160
aaagtgtgg ggattacagg catgagccac ctggccctggc ctctgtatc tttatataattt 11220
ttaacttaat ccttacaaga gcccgttggat ctgttacag gagcacaat gggaaaccaag 11280
aaacagaaaa atttacatcgc atgactcgtt cctcagagcc atgtatggcc gtgtccgtc 11340
atggcaggca ggtcaggggc ctggggaaacg ctgttctggaa aacccctggcc aggcctggc 11400
acccgaggaa tggcttttc agagtttttggctctttt ccagacccctc cctgaccctt 11460
agctctggaa actatgtatc ccaagtgcct tccggggagg gggccctct cctggtaact 11520
ctttctgggtt aaccagatgtt ggactcatga cacacactga gcctacgttct tataattttt 11580
tgttttttttt ttttgagacag tttccgttctt ctggccctggc ctggaggatc atggtgcgt 11640
ctcggtctac tgcaacccatc gcctccctggc ttcaaggatc tctcctggcc cagccctccct 11700

015859-4.ST25,2008-12-10.SEQ LISTING

015859-4.ST25.2008-12-10.SEQ LISTING

catgagtccc caaagagact caattctaaa agttggctc caccagctc ctgtggctta 14460
 ggggtcaag ttcaactgtg aaagccctgt ttgtttga ttgtgttgc agggagagga 14520
 aaccgcctt ctgttgc aactccctc cctaagggga gaaatcaata ttacgtcca 14580
 gactccaggat atccgtacaa ttgatgttgc agatgttgc actcagccaa aggccggatc 14640
 ccacaaaaca aaaaatattt ttgttgcgt actttgtga agatgttgc taaattcctg 14700
 attgatcgt gtctttagg tgatgttgc taacaatgt aaaaacaatata acaacgaaag 14760
 gaagctaaaa atctatacac aattctaga aaggaaaagg caaatataga aagtggcgga 14820
 agttcccaac attttagt ttccctttt gaggcagaga ggacaatggc attaggctat 14880
 tggaggatct taaaaggctg ttgttatcct tcgtggaca acaacagca aatgttaca 14940
 gttaaacatc gagaatttc aggaggatct ttcaagat gcgttccaa ttgttgggg 15000
 gcgtcagtc ttcaccggag acccaaatac aacaaatcaa gtccgtcc ctggcgacac 15060
 ttcaagga ctggagttttt aatcagatct tcacgggtt aaaaagccat gcacatcg 15120
 ccgttcgaaa ctccctct tcgttgcg tgaagacatt taaaatcac cccactgcaa 15180
 actccccc ctgttagaaa ctcacattt aatgttgc aatgttgc gccccgatgt 15240
 caatcgcccc aagccagggt ttccagatct gacacagcg gtcgtatcc gggtcgggac 15300
 actgccttgcg agaggctgcg agc atg ggg ccc tgg ggc tgg aaa ttg cgc 15350

Met Gly Pro Trp Gly Trp Lys Leu Arg

-21 -20 -15

tgg acc gtc gcc ttg ctc ctc gcc gcg gcg act gca g gtaaggctt 15400

Trp Thr Val Ala Leu Leu Ala Ala Ala Gly Thr Ala

-10 -5 -1 1

ctccaggc cagaataggt tgagagggag ccccccgggg gccccttggga atttattttt 15460
 ttgggtacaataatcactc catccctggg agacttgcg ggtaatggca cggggctt 15520
 cccaaacggc tggagggggc gctggagggg ggcgtcgagg ggagcgcgag ggtcgggagg 15580
 agtctgaggg atttaaggga aacggggcac cgctgtcccc caagtctcca cagggtgagg 15640
 gaccgcac tctttgagac ggagtctagc tctgtcgccc aggtggagt gcagtggcac 15700
 gatctcagct cactgcaacc tccgcctccc ggtttaagc gagtctccctc tctcgcctc 15760
 ccgaatagct gggattacag ggcgcacacc accacggccg cctaattttt gtattttag 15820
 tagagacggg ttccacat ttggccagg ctggctcga accccgacat caggtgatct 15880
 gcccggaaatgt gctgggatta caggcgatcc accccggcc cggccgggac cctcttct 15940
 aactcgaggc tgggtgtggg gacccatcgt cctaaaacaa gggatcactc ccaccccccgc 16000
 cttaagtct tctggggcg agggcgactg gagacccggta tgcgtccct ggaggtcacc 16060
 gggggctcag gggccatcgt ccccttgcg cgaccccgagg gcgcactgc catcctgagt 16120
 tgggtgcagt cccgggattt cggcgatgc tccggacgg gggccacccc ctccggcccc 16180
 tgcccccgc cctttggccc gccccccgaa ttccattggg tgcgtccaa cagggccaccc 16240
 tcgagccact cccctgtcc aatgttgcg ggtggaggcg gagggcgccg tggggaggac 16300
 ggggttgcg tacgagcgccg gggggctgg cgccggatgc tgacccatc tttgtccgg 16360
 ggcggccgatc tgcaggggg gctggcggt cctcccggt tgcgtccaa aaggcgacga 16420
 caagtcccggtt gtcggcccgatc gacatacactg agtcccttc ctttgcgttgc 16480
 ggcctcccgatc gcaatggccatc cgggttccgc tgcgtccgtt ggcacacat cccgtcccccac 16540
 ctgttgcgtt gggggccctt cggccatc gtttgcgttgc tgcgtccaa aaggcgacga 16600
 ggcacccatc ggcgtccgtt tgcgtccgtt gtttgcgttgc tgcgtccaa aaggcgacga 16660
 cctcccttgcgtt tgcgtccgtt gtcggcccgatc gacatacactg agtcccttc cccgtcccccac 16720
 cccctgggg tggcgtccgtt tgcgtccgtt gtcggcccgatc gacatacactg agtcccttc cccgtcccccac 16780
 cggcgatttt tgcgtccgtt gaaatggattt agatgttgc tttccacaag aggctggta 16840

015859-4.ST25.2008-12-10.SEQ LISTING

gtgcgtatc ctgaggtaga gcttttagg tggcttaaa ttatgtgcag agagacagcc 16900
tcgcctaga caacagctac atggccctt ccctcctgag aaccagccta gcctagaaaa 16960
ggattggat tgcctgatga acacaaggat tgcaggaac ttttttta attggcaagg 17020
gggttgcct tgactggat gagagcttg aactgcctt aaattcacgc tgtaactaac 17080
acaccagtt cctctggag gccagagagg gagggagggt gtaatgaaat acggatgatt 17140
gtctttat ttttatttac ttatatttt tttaacttt ttagagatg aggtctcgct 17200
tggtgctca ggctggctt gaactcctgg cctcaagcga tcctccattc tcagcctccc 17260
aaagtgtgg gattacagga gtgagccacc gcgcgcacc gggatgatg atgattgcaa 17320
acattctgcc actcagttt acaaaagaaa gagaggcact ggattaatgt gtatctact 17380
caccaatcaa cctctccctt aagagaaaaat gtaaggaag tcctaggcaa ggcctgttt 17440
gttcatcaact tagttctc tctccggga tggctgagaa tgtatgttt cctctgtgt 17500
caaggagact acacccctga tggcttcctc cagacitctg agagctggc tggcttctaa 17560
gcacttctca gctgcaccac ctcacgctgt agctggctt aaggcatatc caggggggag 17620
tttctgtcc attccctta caaagggaaat tggtaat ctgaaccgca agccctact 17680
tagaccaaaa tcaggcaaca gcggtgagcg cagctccaaa cgtgtcaatg actcaccctaa 17740
atttgagtaa gggagttggc tgcttaacg agccgcaggg tgattccctt gtcattccg 17800
gaaataccctt ctccctggg aacactggg aaaaacaggg agacccctgt tgagacagaa 17860
aacctgttagg ggaattctgt tcctcattcc tgctttatc ttagacttc ctccctgata 17920
agatccaaattt cttagatgggtt cgggtgctcc ttgctttagt ggggtgctt atggcttta 17980
tttatttttattttttt attttttttt tgatggctt ttgatgtcc ctttcccttc 18040
cacactctgt cccaaactgtc aagcaaatacg cttttgttg ctaagagact gcagatgtaa 18100
ccgaccagca gcaaaacagtg agtcaggctc tctctccgg aagcaaaatc aattgctgag 18160
atcaactctgg ggaaaataacc caccttattt gggaaagaagc actgtatcaat tgatgtctat 18220
ttttttttttt ttagagttgg agtctcgccc tgcacccag gctggagtgc aatggcataa 18280
tctgcctca ctgcaatccc cgcctccgg gttccagcaa ttctcctgccc tcagcctcct 18340
gagtagctgg aattataggc gcctgcccaca acacccggct aattttgtt ttttagtag 18400
agatgggggtt tcaccacgtt gcccaggctg gtctcgaact cctgacccctg tgatccaccc 18460
gcctcagccctt cccaaagtcc aaggattgca ggcgtgaccc actgtgcccag ccaatcaatt 18520
gatttctcat tcatttcag ctggctctgt tcccttaagc caggggattt tcgtttttt 18580
gtttccctt caagggaaatg attctagctt cagtttttagt ttccctgtac aactgtttc 18640
agtagcacag gggaaagaaaa catcgaaagc attcaccacc tcattttgtt gctgggggaa 18700
aaagcagaaaa tttgttatttctt ttcgtatgacc ttgttccctga ctgttactc 18760
gtgactttagt agatcagagg gctagaggac tagaattttt agagggtttt tttttttttt 18820
tttatttttgc ttcgagttgc ccaggctggc gtgcagttggc gcaatctcg ctcactgcaa 18880
cctctgcctc ccaggcttcaa gcgattcttgc ggcctcagcc tcctgagtag ctggactac 18940
aggcgccccgc caccacaccc agctaattttt ttttttttctt agtagagatg ggatttcacc 19000
atattggctca agctggccctc gaactcctga cctcgtgatc cacccgcctc agttcccaa 19060
agtgcgtggcgtt gtagccggcgtt gcccggcctt tttgtttttt tttttttttt 19120
agaggagctc attgtttttagt cccttccctt agcgtgagaa aatctgggaa tccatgtct 19180
agtttacttc ttttttttttt tttttttttt tttttttttt tttttttttt tttttttttt 19240
agctcatttgc aacttctgc tccgggggttcc aagggttttctt cgtgtctcg ctcctgggtt 19300
agcttaggata cgggcaccccg ctaccatgtcc tggcttaattt tttttttttt tttttttttt 19360
ggtttgcctca ctggccatggc gctggctcg aactcctgac ctcaggtgag cccctgcct 19420
ttggcccttca aagtgcgtggcgtt gtagccggcgtt gcccggcctt aatgtttttt 19480
tcctgaaattt caatggctt aatgtggaaat aaccccaactt tgctgaaag aataagaaag 19540

015859-4.ST25.2008-12-10.SEQ LISTING

agggtgcgggt tcgttgggcc gttgtatgtt ggaacaggac tggtttgtc cccttgcctg 19600
gaaaggcag caactgtgag gacagctcc tgacgtgctc tcactcagca ctgtccgtt 19660
cctgagcact gtccccacta gctaggccaa gggagctcat ttggcaggca actgtgtct 19720
ggctgcgcct gtggcagtaa aatctgcctt tatttttgg aggcagggtc ttgcccgtc 19780
gctcaggctg aagtgtgcag ttatagctca ctgcagccctc cagcttcgt actcaactga 18940
tcctccctc tcagcctcct gatgtgttgg gactatacgc acgtgttacc actcccacct 19900
cagtttgtt gtttattttt ttatttttatttattttagt atggagttt gctctgcgt 19960
cccaggctgg agtgcataatgg cgccatctcg gtcaccgcac acctccacccct cctgggttcaa 20020
gcgattctcc tgcctcagcc tcctgagtag ctgggattac aggcacgcac caccacgccc 20080
ggctaaatttt gtattttgc tagagatggg gtttctccac attgggttgc gctgttctcg 20140
aactcccaac ctcaagggtat ccacccgcct cagccctcca aagtgcgtggg attataggcg 20190
tgagccccccg aaccggccca ctcccaagctca agtttaaattt ttttgttgc ttgttcgtt 20260
gttttttattt ttggagacag agtctccgc ccaggctggc ggcacatca ctgcacccctt 20320
gaccccccag gcttaagcca tcctcccccac tcagccctcca aagtagctgg gattacagg 20380
gtgtgcact atgcttggct aagtgtgtt tttttgttag agatgggggtt caagggttcc 20440
tcgcttgcgtt gcctcggtt gtctcaaact cctgggctca agcagtcctc ctcctcagc 20500
ctcccaaggt gctggggaaa tccacttttgc aaacattgtc tggagatgtt cccagggtgt 20560
agatcacaga aataggtcat cgtgggggtcc ttccatggg tgcaagtctg agccacactgt 20620
ggccagcaaa tatttggaga ataatagtca ggggagagct tgaggccag gaaaagggtt 20680
tgttttgcgtt cagggaagg ttttttttgc tctttatccc tccttaaagg accttcaggt 20740
gttactgaca ttcccggtct acccagtggc acatttagtt tgtaagctgg gcccctgtac 20800
agaggttaggg aggtgagagc attggattag tggtcaccaa agctgcggc acctagtggg 20860
gtgatcagag gctccctccct taagatcttgc attgccaacg cctctggccc aactttccctt 20920
tttattttatc gcaaggctcc ttggaaatctca attgctttt gcccacccgg tgggtcagca 20980
caagaaatga gtcattccct ccttaagca cagttgaaat tgagctgtga gtcagtgagg 21040
tgtgtacgtt atgtcaaag cgggggtgtt acagtttgcgatctgtt gttggcaag 21100
agaattatca gagtttgtga ccacagcaga ttccaaagct cgactcattt tcttcctct 21160
tcctccctt tttcttttgc ttttttttgc agagtctcgc tctgtgcctt 21220
aggctggagt gcagtgccac aatctgggct cactgcagcc cctgcctctt ggggtcaat 21280
gattctcatg ttcccgctc ccggatgtct gcaattacag gcattcggtt tcaagtgtt 21340
ctcctgcctc agccacctga gcagctggga ttacaggcgc ccggccaccac gcccggctaa 21400
ttttgtatt ttttagtagag acggggtttc accatgttgc ccaggctgtt ctcgaactcc 21460
tgaactcagg tgatccccc acttcggctt cccaaagtgc tgagattaca gacgtgagtc 21520
accgcgcaca gcctgtctg ttcttaattt ctcaaaaacac cctcttaggaa gtagagactg 21580
ccattctccc ccattttaca gatcaggaaa ctgagtccttca gaaggatttgc tgcagggttacc 21640
caagttgttc tagttaaatgc gcctggaaag ccagtgaaaccc ccaggattgtt ctatctaacc 21700
cccttactac tctaacttgc agggaaatcca catgaatgtc ctgggtcaac catcaaagt 21760
gaaatggata aagggggctg gatgcgggtt ctgatgcctg taatcttgc accttgggag 21820
ggcggatgg gtgggtggat tgcttgagcc caagagtttgc agaccgcctt gggcaacata 21880
gtgagacacc tgcgttgc taaaataat taaaatgttgc tgggtgcaccc 21940
ctctagtcac agctgttgc ttaggcttag gcaggaggat cgcgttgcacc tggggagggtt 22000
aggcgccctgt gaggctcagt catgccactg cactccaacc tgggcaacag agtggaaagcc 22060
gggtgcggaa agagaaagaa taaaagacat agatacatct tttaaagtttgc ggttgcaccc 22120
taattaccta caactcagtt tcaactgtgc taaaaggagg aaatgactca ttctgcata 22180
catatcaaataat tagccaaaaa tgcgttgc taaaacaaca cattttatgtt ttctcagttt 22240

015859-4.ST25.2008-12-10.SEQ LISTING

ttgcgtgtca ggaatttgg a gcagcacag ctagacggg ccagctcagg gtctctatg 22300
aagtgcata caaaatattt gcaggagaga aaaacatattt tcagaagct gcaggcatag 22360
gaagacttgg ctgggggtga aggtccact tccaatggg cgcaactcgt ggcttggc 22420
tggaggccctc agtccctgc tgcgtggagc tctccctca gctgcttgc tggactcatg 22480
acatgcagct ggcctccct ggagcagtcg atccaacaat gagcatggcc atgaactagg 22540
ctcagaagcc actccctgca gtctctatca gaagcaagtc attaaaagtc 22600
cagtgcact ccaggggaga cgaattaggc tctgccttc gaaaggatta tcacagaaga 22660
tgcggcccta tattttttt taaaattat tctttttttt attttgtaga gatggggct 22700
tggatgttgc cctagggccag tctggaattt ctggctcaa acaatccgt ctgcctcc 22780
caaagtgttgc ggattacagg catgagccac tgcacctggt catgtggtca tattttttt 22840
ttctttttt tttttttt agacagagtc tctgtgc cccaggcttgcgtt 22900
gatctcaggct cactgcagcc tccgcctcc ggggtcaagc gattctccgt ctcagccctc 22960
ctgagtagct gggattacag ggcggccca acaatggccag ctaattttt tagtagagat 23020
ggggtttccac catgttagcc aggtggctc cgatctccgtt atttgggtat cggccaccc 23080
tggcctccca aagttcaac catcgatcag aacttatttga tgcactttagt tagctaggca 23140
cgggtggccgc tgcctgtat cccagctact tggagggtt aaggcaggag aatcgcttgc 23200
acctgggagg cagagggttac agtgagtcaaa gatcatacca ttgcactcca gtctgggca 23260
cagaatgaga ctctgtctca aaaaacaaaaa acaaaccctt gtatgtgatt ttctggata 23320
gcacatgttca catcttcaca aagataaaaaa gtcagacttg gctggccatg gtggctcaca 23380
cctgtatcc cagcactgag aggctgaggc aggccagatca cttgaggtca ggaatttgag 23440
accaggctgg gcagcatggt gaaacccctt ctctacaaaaa aataaaaaa ttagccgggt 23500
gtgggtcac gcacctgtat tcccaagctca ctcaggaagc taaggcagga gaatcacttg 23560
aaccaggagg tggagggttgc cagtggatggt agattgtgcc attgcactcc agcctggcc 23620
acagagttagtgc aaaaataaaaaa taaaataaaaaa tttttttttt ggcagattt 23680
ttttctct tggatgttgc accttattat agtaataata agtgcataatg gcatgttgag 23740
ataagcaatc ataattttgtt attgcggccg ggcattggc ctccagccta taatccac 23800
actttggtca ggagttcaag gccagccctgg ccaatataatg gaaactccat ctctactaaa 23860
atacaagaaaa ttacctggc atgggtggcag ttgctggat tcccaagctca cttgggaggc 23920
tgaggccagga gaatcgcttgc aacctggaa gcagagggttgc cagtggccca agattgcacc 23980
actgcactcc agcctgggttgc acagagttagtgc actctgtctg aaaaataataa taataataat 24040
ttgttatttgc ttatttgc ttagtttaca tagggatca aagtttatac ttgatttt 24100
aaaagttgttgc ttgatttgc ttcacagaac cagaatctt catataaagg tatttagagg 24160
cccagtgtgg tggctcatgc ctgtatccc agcatattgg gaggctgagg agggaggatc 24220
actttaggag ttgaggccca gcctaggcaaa catatgtgaga ctttgccttca aaaaaaattt 24280
ccaacatttgc ctggccatgg tggcatgtgc ctgtatccc atttattttgg ggggctgagg 24340
caggaggatc acttgagccca acgagggttca atccagggttgc cagtggccca tgatcctgc 24400
actgcactcc agtttgggttgc acagagccaa gctatgtctc aaaaaaagaa aaaaaaagta 24460
ttctaaatcc aatatttataa tataaaacta aatgcaggcc aagtgtggtgc gcatataatcc 24520
ataatcacaacacttggaa ggctgagggttgc ggaggatttc ttgagccaa gagttcaaga 24580
ccagccctagg taacacagta agacccatc tctacaaaaa gtagaaaaat tagcctggca 24640
tgggtggtag tgcattttat cccaaactact tagggggctg agatggaaatgattgttag 24700
cctcagatgttgc tggggccgttgc atgcctccac tgatcgtctca aagtggatc 24760
cctgtctca aaaaaaagaa aatagaagaa aacttataatc attcaataatc actttgtatc 24820
ctttccaaatc gttgtttat attttggaa attttccatg tactttgttc tcattttat 24880
gtaataatct aagtcttgc tttctaaatc aagttttctt ctattttat tttttgtttaa 24940

015859-4.ST25.2008-12-10.SEQ LISTING

tgtttccttc ccattcttt tgatctgatc ttcaagataca tgattatctt cactgctaaa 25000
tttgcgttct ctggcctcta catttataat ttctcataat tctttatcta agtatttctt 25060
ccctacctac tgaagaaaaac tcaagtttc ttccaccta atgattatgc tggctgtg 25120
agtttcttc atgactctt acagtacaag tttttgttt ttgtttttt aatggcaga 25180
tggatagaac aacacagggt ttgttgcgtt tggttaact ttaaaaaaaa ttataataga 25240
taaagggtct cactacgttgc tccaggctga tctcataactc ctgggctcaa gcaatccacc 25300
caccctcgcc tcccaaagtgc ctgggattac agtcatgagc caacatgcct gggcagtaca 25360
gtttttttt gagacggagt ttgttcttg ttgcgcggg tggagtgc当地 tggcacaatc 25420
ttggctcacc acaaagtctg cctcccgagg tcaagtgatt ctccgcctc agcctctga 25480
gttagctggaa ttacaggcat gtgccaccac gcccagctaa tttgtatttt ttagtagaga 25540
cggggttca ccatgttggc caggctggtt tcgaactgct gacctcaggt gatctgccc 25600
cctcggcctc ccaaagtgc gggattacag gcatgagcca ccatgcccag ctgtgtaca 25660
gttttaata tgctaaatac tcttccttc ttattaaatg tgcatgaaag ttctaatatt 25720
ttttcccat accccagaga gtccatattt tggaatcaac aacactagcc ttgttgaca 25780
agtgtcttc ttgggttcct tctttgtgc ctccactgaa tttgggggtt cataaaaattt 25840
cattttgttgc gcttgc当地 ttccctggaa atcagactgt tctgatcg atgacattc 25900
tggtaattt ttagttggc agggaaataga cacaggaaac gtggcagtt tctgatttg 25960
gcgttgagag acccttcctc ctttcctct ctctcag tg ggc gac aga tgc gaa 26014

Ala Gly Asp Arg Cys Glu

5

aga aac gag ttc cag tgc caa gac ggg aaa tgc atc tcc tac aag tgg 26062
Arg Asn Glu Phe Gln Cys Gln Asp Gly Lys Cys Ile Ser Tyr Lys Trp

10 15

20

gtc tgc gat ggc agc gct gag tgc cag gat ggc tct gat gag tcc cag 26110
Val Cys Asp Gly Ser Ala Glu Cys Gln Asp Gly Ser Asp Glu Ser Gln

5

30

35

Chu Thru Cus

40

40 tagagacagg gtctcgccat gttggccagg ctggcttga atttctggc tcaagtgatc 26220
cgctggcctc ggcctccaa agtgctggg ttacaggcac cacgcctggc ctgtgacacg 26280
attcttaacc cctttttagt gatggcggct gggaaaagtgg ccagtgatt ttgatgtatt 26340
caatcatgaa ttaggaggtg gggagagaat gaattattgg agctttccctt aaagccattt 26400
aatggctcta ttgtttttc aatttgatgtg aatttcacat aacatgaaat taaccagctc 26460
agtggcattt atacatctgc aatgtgtgtt ggccaccacc tctatcttgttccaaaactt 26520
tgcataacctt aatgtctttt tttttttttt ttttgagac ggagtctcg tccatcaccc 26580
aggctggagt gcagtgggtt gatctcagct cactgcaacc tccgcctccc aggttcacgc 26640
catcctcctg cctcagcctc ccgagtagct gggactacag gcaccctcca ccacatccgg 26700
ctaattttt gtatcttag tagagatggg gtttccat gttagccggg atggctcga 26760
tctcctgacc tcgtgttcca cctgcctccg cctcccaaag tgctggcattt acaggcgtga 26820
gccaccatgc ccggcctatt tttttttta agagatggg tctaattctg ttgcccaggc 26880
tggagtcag tggtaaccatc atacttacttgcagcccttga cctctggc tcaagtgatt 26940
ctcttcgcctc gaactccaa agtattggg ttacagggtt gagccaccgc actcagccta 27000
atgtccagtt ttaacaagc tccattaaa tgccctccgt ttgacccat aaaggggttag 27060

015859-4.ST25.2008-12-10.SEQ LISTING

gcttggccgg gcacaatggc ttgtgtctgt agtcccagct acttgggagg ctgaggcaga 27120
 aaggcagaaa gattgctta taaagccag gagttgagg gcccacccgg tggcatagct 27180
 agacctcatc tctaaaaat aagtaataaa taaatatttgc ttttgc 27240
 tttctttt tttttttt tgagacggag tcttgctctg ttgcccaggc tggagtgcag 27300
 tggcgcgatc tcaagtcact gcaagctgtg ctcctgggt tcatgccatt ctccgcctc 27360
 agcctccga gtagctggga ctacaggcgc ccactaccac gcccagctaa tttttgtat 27420
 ttttagtaga gatggggtt caccacgtt gccaggatgg tctcaatctc ctgacccgt 27480
 gatccgcccag cttggccctc ccaaagtgtt gggattacag gcgtgagcca ctgagccgc 27540
 cccatatgtt ttttttttta aatgggaga ccaggcatgg tggctcatgc 27600
 ctagaatccc agcacttgg gaagctgagg taggcggatc acttgaggcc atgagttga 27660
 gaccagcctg ctcaacatga tgaacttct atctctacta aaaaaaaaaaag tgggattagg 27720
 tcaggcacgg tggctcacac ctgtaatccc agcacttca gaggccgagg caggaggatc 27780
 atgaggtcag gagatcgaga ccatcctggc taacacgggtt aaacccgc tctactaaaa 27840
 aaatacaaaa aattagccag gctgtgtggc ggggcctgt agtcccagct actcaggagg 27900
 ctgaggcagg agaatggcgt gaacccggga ggcggagctt gcagtgagcc aagatcgtgc 27960
 cactgtactc cagcctggc gacagagcaa gactctgtt caaaaaaaaa aaaaaaaagt 28020
 ggattgacat tctctcaaa gttctgggtt ttcccttgc aaagacagga ttggcaaggc 28080
 cagtgggtct ttttgc ttttgc ttttgc acggagtctc actctgccac ccaggctgga 28140
 gtgcaatggc aggatctcggtt ctcaccgc ctcaccgc ccaggtaaa gtgattctcc 28200
 tgcctcagcc tcccggatgt ctggactac aggtggccgc caccacaccc aactaattt 28210
 tgtatttta gtagagacag ggtttcaacta tattggccag gctggcttg aaccctgac 28320
 ctcacgtgtt ccacccgc tggccccc aagtgcgttgg attacaggcg tgagccactg 28380
 tgctcggcct cagtggtct ttcccttgc tgacagttca atcctgtctc ttctgtatgt
 28440

tct gtc acc tgc aaa tcc ggg gac ttc agc tgt ggg ggc cgt gtc aac 28488
 Ser Val Thr Cys Lys Ser Gly Asp Phe Ser Cys Gly Gly Arg Val Asn

45 50 55

cgc tgc att cct cag ttc tgg agg tgc gat ggc caa gtg gac tgc gac 28536
 Arg Cys Ile Pro Gln Phe Trp Arg Cys Asp Gly Gln Val Asp Cys Asp

60 65 70 75

aac ggc tca gac gag caa ggc tgt c gtaagtgtgg ccctgcctt 28581
 Asn Gly Ser Asp Glu Gln Gly Cys

80

gctattgagc ctatctgagt cctggggagt ggtctgactt tgcctctacg gggctctgt 28641
 cgagctgcaaa ggcagctgcc ccgaactggg ctccatctt tggggctca tccaaggct 28701
 ctccggccct tcaaattcccc ctttggccatc gaggcattac aaagtggggta tgggtctacc 28761
 tcttcgggtt tgcacgcac agtcaggag gctgtccctg ccggaggctt gcccacccggc 28821
 acacacactg gcaagccgct gtgattcccg ctggctgtt tcccccgtat cctgtatcc 28881
 ccggcccccgtt aggctgaaca catatgtacg ctttgcgtt aagccctaat gaccacgtt 28941
 acatgaaggg gggaaaggcca gaaaggctt ccaaggagca agggcaagaa tcccgaaagg 29001
 aaatggactt tgaagctggg cgttcttgc gctgtctttaa tacaagtggc acatccaaat 29061
 ccaaaaacccc gaaattcaaa gtcttggcc cccggaaattt tgaaacgtt tgagccactg 29121
 cttttagaaag gaaatgttta ttggaggcatt ttggatttgc gatggattacc actgagttgt 29181
 gagtcctaat taggaaaaaa accaggctga ccgaacccaa gggaaaggcaat aaaagaaggc 29241

015859-4.ST25.2008-12-10.SEQ LISTING

agatagggtc aggacacggtg gctcacccct gtaatcccag cctttgaga ggctgaggcg 29301
 ggtggatcac ttgaggctag gagttcgaga gcagcctggc caacacggtg aaaccccatc 29361
 tctactgaaa atacaaaaac tagccaggta tggtggcgtc tgcctgtaat cccagctact 29421
 cgggaggctg agacaggaga atcactgaa cctgggaggc agaggttgcgt gtagccaat 29481
 atcacgccc tgcactccag cctggggac aagagcggaa ttctgctca aaaaaaaaaaaga 29541
 agaagaaggc cgacaaacta tgtaactctg ccttctcca tggtccagaa cacacagccc 29601
 tcctgcgtaa ataactccct atcttctgc tccagctat catcagacac ctggctgat 29661
 agaaaaattgc aagttagctc actgcaacct cggcattata agtactgcac aaagccctct 29721
 tcagcgcaca gcacaaggcac cattctataa aatctccagc aagcggccag gtgcagtgcc 29781
 tcataccctg aatcccagca tttgggaga ctgaggcggg cggatcacct gaggtcagga 29841
 gttttaggacc agcctggcca acatggtcaa accccgtctc tattaaaaat aaaaaaaaaat 29901
 tagccaggcg tggtggcagg tgcctgtaat cccagctact tggaaaggctg aggcaggaga 29961
 atcgcttgc a cccgggagggt ggaagttgcgt gtagcccgat atcttgcac cgcactccag 30021
 cctggggac aagagtgaga ctgcgtctca aaaaaaaaaa aaaaaattcc cagcaagcct 30081
 ttgtctctg gcagtca gctcttgc tgacctgctc attgccttct tgcaaggat 30141
 ttctcacct actttctgga ataaatctgt ctttctgtac ttacaactac ctttttaaa 30201
 atttcttct tttttagat ggagtctcac tcttttgcc caggctggag ttcaaggat 30261
 caatctcagc tcaactgcaac ctctacccatc tgggttcaag cgattctcgc gcctcagctt 30321
 cccgagtagc tgggattaca ggcgtgcacc agcacgcagg ctaatttttgc tatttttagt 30381
 agagacgggg ttccaccatg ttggccaagg tggcttgc tccctgaccc caagtgtatcc 30441
 tcccacctca gcctccaaa gcgttaggat tacggccatg agccactgag gccggctgca 30501
 cctacaactg tcttgataaa ttcttaccc cacaccactg gtccagatag tcagtgcac 30561
 cccacaacat taaggatatt ccaaatttga aacattccaa aatcagaaaa atattccac 30621
 tctgaaaata ttccaaaatc caaaaatttcaaa aacacttgcgt gtcggca 30681
 tttagagaaa gggatactca accccaaata aggacagcaa ttctataat tgcgtatcca 30741
 tcttgcagg tctca gtcgttaca cctattagcg caccagtgc catagcagt 30801
 ctgggaaatg tgcacatg aggaaactgaa ggcaccgaga gggcagtgg tcagagtcc 30861
 tggccctgaa ctgctccccca gcccgcctt ccagggccct ggcctactg cggcagcgtc 30921
 cccggctata gaatggcgt gtttgggag acttcacacg gtatggtgg tctcggccca 30981
 tccatccctg cag cc ccc aag acg tgc tcc cag gac gag ttt cgc tgc 31029

Pro Pro Lys Thr Cys Ser Gln Asp Glu Phe Arg Cys

85 90 95

cac gat ggg aag tgc atc tct cgg cag ttc gtc tgc tgc gac tca gac cgg 31077

His Asp Gly Lys Cys Ile Ser Arg Gln Phe Val Cys Asp Ser Asp Arg

100 105 110

gac tgc ttg gac ggc tca gac gag gcc tcc tgc ccg gtg ctc acc tgt 31125

Asp Cys Leu Asp Gly Ser Asp Glu Ala Ser Cys Pro Val Leu Thr Cys

115 120 125

ggt ccc gcc agc ttc cag tgc aac agc tcc acc tgc atc ccc cag ctg 31173

Gly Pro Ala Ser Phe Gln Cys Asn Ser Ser Thr Cys Ile Pro Gln Leu

130 135 140

tgg gcc tgc gac aac gac ccc gac tgc gaa gat ggc tgc gat gag tgg 31221

Trp Ala Cys Asp Asn Asp Pro Asp Cys Glu Asp Gly Ser Asp Glu Trp

145 150 155

ccg cag cgc tgt agg ggt ctt tac gtc tca ggg gac agt agc ccc 31269

015859-4.ST25.2008-12-10.SEQ LISTING

Pro Gln Arg Cys Arg Gly Leu Tyr Val Phe Gln Gly Asp Ser Ser Pro
 160 165 170 175
 tgc tcg gcc ttc gag ttc cac tgc cta agt ggc gag tgc atc cac tcc 31317
 Cys Ser Ala Phe Glu Phe His Cys Leu Ser Gly Glu Cys Ile His Ser
 180 185 190
 agc tgg cgc tgt gat ggt ggc ccc gac tgc aag gac aaa tct gac gag 31365
 Ser Trp Arg Cys Asp Gly Gly Pro Asp Cys Lys Asp Lys Ser Asp Glu
 195 200 205
 gaa aac tgc g gtatggcg ggccagggtg gggcggggc gtcctatcac 31415
 Glu Asn Cys
 210
 ctgtccctgg gctccccag gtgtggaca tgcagtgatt taggtgccga agtggattc 31475
 caacaacatg ccaagaaagt attccattt catgtttgtt tctttttttt ctttcttc 31535
 ttatatttgtt tttttagatg gagtctca ctgtgatttttttcatctt aaatttccctt 31595
 catccatatg gcccaccatga gcccaggc tggccgatgg ttgctgttag ctattggga 31655
 aatcactgtt tggaaagggtgc tgggtgtttt ttgttgtttt ttgttgtttt 31715
 gttttgagac ggagtcgc tctgtcgcca ggggtggagtg cagtggcgcg atcagctcac 31775
 tgcaacctcc gcttcctggg ttcaagccat tcttcgtccct cagcctccca agtagcgccgg 31835
 attacaggca tggccacca cctccggcta ttttttttc tatttagtag agatggggtt 31895
 tcaccatgtt agtcaggctg gtcataact cttgacactca ggtgatccac ccgcctcgcc 31955
 ctcccaaagt gctgggatta caggcgtgca ctgctgcacc cagccctttt ttgtttttt 32015
 gagacagggtt ctgtgtca cccagggtga agtaagggtgg cacgattatg gtcactgcg 32075
 gccttgcattt cttggctca agegatcctc tcaacttcgc ctctcaagca gttggaaacca 32135
 caggctgtac caccaaggcc gccaattttt ttgtacaga cacaggctgg tcttgaactc 32195
 ctgggctcaa gcaatccctcc tgcctggcc tcccaaagtg ctgggattcc aggcatgagc 32255
 cgctgcaccc ggcaaaaaggc cctgcttctt ttctctgg tgcctctt tgagaaaaatc 32315
 aacacactt gtcctgtttt cca gct gtg gcc acc tgt cgc cct gac gaa 32365
 Ala Val Ala Thr Cys Arg Pro Asp Glu
 215
 ttc cag tgc tct gat gga aac tgc atc cat ggc agc cgg cag tgt gac 32413
 Phe Gln Cys Ser Asp Gly Asn Cys Ile His Gly Ser Arg Gln Cys Asp
 220 225 230 235
 cggtttttttt gaa tat gac tgc aag gac atg agc gat gaa gtt ggc tgc gtt aat 32461
 Arg Glu Tyr Asp Cys Lys Asp Met Ser Asp Glu Val Gly Cys Val Asn
 240 245 250
 g gtgagcgctg gccatctggt ttccatccc ccattctcg tgccttgctg 32512
 cttgcaaaatg atttgtgaag ccagagggcg ctccctgg tgcctctgca ccagctgtgc 32572
 gtctgtggc aagtacttg acttctcaga gcctcacttc ctgtttttt gagacggagt 32632
 ctgcgtctga cacccaggct ggagtgtgtt ggcacaatca cagctcacgg cagcctctgc 32692
 ctctgatgtc cagtgattct cctgcctcag cctcccgagt agctgagatt aaaggcgat 32752
 accaccacgc ccggctaaattttt tatttagaga cagggttctt ccatgttggc 32812
 caggctggc ttgaaactcctt ggtctcaggat gatccacccg cctcggccctc ccaaagtgtct 32872
 aggattacag gtgtgagcca ctgcggccagg cctaattttt ttgtatattt agtagagatg 32932
 cggtttgcc atattggccca ggctggctc gaactcctgg gctcaagcga tctgcctgcc 32992

015859-4.ST25.2008-12-10.SEQ LISTING

ttggccccc aaagtgtgg gattacaggc acaaaccacc gtgcccacg cgtttctta 33052
 atgaatccat ttgcatgcgt tcttatgtga ataaactatt atatgaatga gtgccaagca 33112
 aactgaggct cagacacacc tgaccttcct ccttcctc tctggctctc acag tg aca 33271
 al Thr
 ctc tgc gag gga ccc aac aag ttc aag tgt cac agc ggc gaa tgc atc 33219
 Leu Cys Glu Gly Pro Asn Lys Phe Lys Cys His Ser Gly Glu Cys Ile
 255 260 265
 acc ctg gac aaa gtc tgc aac atg gct aga gac tgc cgg gac tgg tca 33267
 Thr Leu Asp Lys Val Cys Asn Met Ala Arg Asp Cys Arg Asp Trp Ser
 270 275 280 285
 gat gaa ccc atc aaa gag tgc g gtgagtcctcg gtgcaggcgg ctggcagagt 33319
 Asp Glu Pro Ile Lys Glu Cys
 290
 ttgtggggag ccaggaaagg gactgagaca tgagtgtgt agggtttgg gaactccact 33379
 ctgcccaccc tgtcaaagg gctcccttt tcattttag acagtctcg acggtcgccc 33439
 aggctggagc gcaatggcgc gatcttggct caccacaacc tccggctccc aggttcaagc 33499
 gattcttcgt ctcagccctc ctgagtagct gggattacag ctgaatgcca ccttgcggg 33559
 ctaatttttg tatttttagt agagatgggg ttcaccatg ttggccaggc tggcctcgaa 33619
 ctccgtaccc cgagtgtatct gcccgcctcc tgaagtgtcg ggattacagg cgtgagccac 33679
 ctgcgtctgg tgagggtttt tttttccca aaccctctg tggtggtatac taaaagacca 33739
 tatttaggata actgtacagt atagagaagg cagtgcaag tttctctgt catataccag 33799
 agtgggcctg ggcattgtgg catactcctg tagtctcagc taatcaggag gctgaggaag 33859
 gaggatcgct tggggccagg agtggagac tgtgtgagc tgtgtatcaca ccaccacact 33919
 tcaatctggg caacagagca agagaccctt tctctaaaaaa aaagtaagta ttccggacac 33979
 tggggccat acggctctg gtgcagtttcaacatggc tggtggtga acacaaccac 34039
 gcacagaacg caaaccataa cacgtggctg tggggccaga aaatgttatt tatggacaca 34099
 aaaattggaa ttcatataa ctgtttgtg tcatgaaaat gatcccctt ttatttta 34159
 ttttcttct caagtatttta aatatgtaaa agccattttt aggccctggca ggtgggtca 34219
 cagctgtat cccagcacct tgggaggctg aggccggagg atcacgaggt caggagatcg 34279
 agaccatcct ggccaacaca gtgaaaccccc gtctctacta aaaataaaaaaa aaattaacca 34339
 ggcttggtgg cgcgcgtctg tagtcccagc tgctcaggag gctgaggcag gagaatcgct 34399
 tgaatgcagg aggccggaggt tgtgtgagc cgagggttgc ccactgcact ccagcctgag 34459
 cgacagagtg agagtccgccc tcaaacaaaaaa aaatgttgc ccatgtggc tttgaactcc 34519
 tgggctcaag ctatctgcct gccttggctt cccaaagttc tgggattaca ggcattgagct 34579
 acagcggcccg gacttttgtt gttttatatac tatatacttataactt gttttatgtt 34639
 tataatataac ttgtttata tatatacata aactgcagta aaaaacatgt aacataaaaaat 34699
 ttaccttc ttttacccattt aagtgcacag ttctgtgccca ttagcaaattt cacaactgtt 34759
 tacaacatca caaccaccaat ctccagaact tttttttttt ttttattct ttttgagaca 34819
 gagttctact cgtgcacagg gctggagtgc agtgggtgcga ttcgggttca ctgcacccctc 34879
 cacctaccag gttcaagcaa ttctcctgccc tcagcccccct cagtagctgg gattacaggt 34939
 gcccgtccata ccacgcccag ctaatttttg tattttcagt agagactgac tggggttcac 34999
 catgttggcc aggctggct cgaactccctg acctcaagtg atcctccac ctcagcctcc 35059
 caaagtgtcg ggaatacagg catgagccac tgcgccccgc cccagaactc ttttatcttc 35119
 ccaaactgaa gctctgtccc catgaaacac tcactctcca tcccctcccc aactcctggc 35179
 acccaccattt ctactttctg tccctatgaa tggatggctt ctagggaccccttctgagtg 35239

015859-4.ST25.2008-12-10.SEQ LISTING

gaatcagaca gcatttcct ttttgactg gcttattca ctgagccaag tgccgtggca 35299
 cacgcctgta atccaaaac ttgggagac cgaggcggc gcatcaccag aggacaggag 35359
 nncgagacca gccccccaa cagggggaaa ccccatcaact agggagcctg cagaaagaaa 35419
 gccaccacat ggcctgctgg agccacacaa tcccagcaaa acaggacgc taaacgtagg 35479
 agaaacacac aaccccagga ggcggaggc gcagtgagcc gagatcgtgc cattacactc 35539
 cagcctggc aacaagagtg aaactccgtc tctcctaaaa atacaaaaaa attagctggg 35599
 catggtgcca catgcctgta gtcccagcta ctgggaggc tgaggcagga gaatcactg 35659
 aacccggag gtggagggtg taatgagcca aggtggcg cgaaggatg gtaggggcc 35719
 cgagagtgac cagtctgcat cccctggccc tgcgca g g acc aac gaa tgc ttg 35773

ly Thr Asn Glu Cys Leu

295

gac aac aac ggc ggc tgt tcc cac gtc tgc aat gac ctt aag atc ggc 35821
 Asp Asn Asn Gly Gly Cys Ser His Val Cys Asn Asp Leu Lys Ile Gly

ly

300 305 310
 tac gag tgc ctg tgc ccc gac ggc ttc cag ctg gtg gcc cag cga aga 35869
 Tyr Glu Cys Leu Cys Pro Asp Gly Phe Gln Leu Val Ala Gln Arg Arg

315 320 325 330
 tgc gaa g gtgatttccg ggtggactg agccctggc cccctctgca 35926

Cys Glu a

tggcaaccaa acccctcatg cctcagttc cccatctgtt aagtgtgtt gaaagcagtt 35986
 aggagggtt catgagattc cacctgcattt gaaaactatc attggctggc cagagttct 36046
 tgcctctggg gatttagtaat taagaaattt caggccgggt gcgtaatccc tgaatccca 36106
 acaccttggg acgcccggaggc gggcagatca cctgaggctg ggagttccag accagcctga 36166
 ccaacatgga gaaaccccggt ctctactaaa aatacataat tagccgggt tgggttgca 36226
 tgcctataat cccagact caggaggctg aggaggaga atcacttcaa cctggggagg 36286
 ggagggttg gtgagccaag atcgtgccat tgcactccag cctggcaac aagagtgaaa 36346
 ctccatccaa aaaaaaaaga aaagaaaaga aaaaaaaagaa aagaaatttca agtgcacaca 36406
 gttcacact ctgggtggg ttccctgtt gaatgtatgag gtcaggtat gactggggat 36466
 gacacctggc tggccatcattacatctc ccgagaggct gggctgtct ctggctgcct 36526
 tcgaagggtgt gggtttggc ctggggccca tcgctccgtc tctagccatt gggaaagagc 36586
 ctccccacca agccctttc tctcttcc ag at atc gat gag tgt cag gat 36638

sp Ile Asp Glu Gys Gln Asp

335

ccc gac acc tgc agc cag ctc tgc gtg aac ctg gag ggt ggc tac aag 36686
 Pro Asp Thr Cys Ser Gln Leu Cys Val Asn Leu Glu Gly Gly Tyr Lys

340 345 350 355

tgc cag tgt gag gaa ggc ttc cag ctg gac ccc cac acg aag gcc tgc 36734
 Cys Gln Cys Glu Glu Gly Phe Gln Leu Asp Pro His Thr Lys Ala Cys

360 365 370

aag gct gtg g gtgagcacgg gaaggcggcg ggtggggcg gcctcacccc 36784
 Lys Ala Val g

375

ttgcaggcag cagtgggggg ggagttcat cctctgaact ttgcacagac tcatatcccc 36844
 tgaccgggag gctgttgct cctgaggcgt ctggcagggg agtctgccgc cctgttagga 36904

015859-4.ST25.2008-12-10.SEQ LISTING

cttgggcttg ccagggggat gcctgcatat gtcctagttt ttggaaatat ccagttaacg 36964
 gaaccctcaag ccctacttgtt ggaacaggaa cccggcttcc ttccaggac aacctgggaa 37024
 gtgacttcaa ggggttaaag aaaaaaaatt agctgggcat ggtgccacac acctgtggc 37084
 ccagctactc agaaggctga ggcgggagga ttgcgttggagg gcaggaggat tggttgatcc 37144
 tcccaccta gcctccggag tagctggac ctcaggtgca tgccactatg cctggctaat 37204
 ttctttttt ctttttttt tttttcggag acggagtctc gctctgtgc ccaggctgga 37264
 gtgcagtggc aggacatctgg ctcactgcaa gctccgcctc ccgggttcac gccattctcc 37324
 tgccctcagcc tccccagtag ctgggactac aggagccgc cactgcacca gccaatttt 37384
 ttgttatttt tagtagagac ggggttac tttgttagcc aggatggctc cgatctctg 37444
 acttcgtat ccccccaccc cggcccttcca aagtgtcgattt accagggcg tgagccactg 37504
 cggccagcc ctaatttca tatttttagt aaaaacaggg tttcaccatg ttggccaggg 37564
 tagcttgaa ctccctgaacc caagtgtatcc tccctgccttgc ctgcctccaa gtgtggat 37624
 tacagacacc acacctggctt attattttt tttagagaca ggggtgtgtctt ctatcttcca 37684
 gcctgtatgt cagtgcagcc tccatcatag ctgcgtcgat ccttgaccc tcgggttcac 37744
 gtgatcgatcc cgcctaagcc tctggaggag ctggagtagt tggcatgtgc caccatgcct 37804
 ggttaattttt tttttttttt tttttgagac agagtctcat tctgtcaccctt aggctggagt 37864
 gcgggtgtgc gatctggctt tactgaaacc tccacccccc aggttccagc aattctctg 37924
 cctcaccctt ctgagtagctt gggattacag gttccggctt cccaaacctgg ctatttttg 37984
 tatgtttagt agagacaggg tttcaccatg ttggtgaggc tggtctcgat tctccgcct 38044
 cagcctccca aagtgtggg attacaggct tggccaccc tcggctggctt tttttttttt 38104
 tttttttttt gtggcaataa ggtctcattt tcttgccttgc gtagcccttgc tgccttgc 38164
 ctcaagtgtat cccctccctt cagcctccca aagtgtggg attacagggtt ggcggccactg 38224
 tgcctgttcc cgttgggagg tctttccac cctcttttc tgggtgcctc ctgtggctca 38284
 gccgcacccctt gcaggatgtt acaaggggat ggggaggcac tcttggttcc atcgacgggt 38344
 cccctctgac cccctgtac cgcctccggg acccccag gc tcc atc gcc tac ctc 38399

ly Ser Ile Ala Tyr Leu

375 380

ttc ttc acc aac cgg cac gag gtc agg aag atg acg ctg gac cgg agc 38447

Phe Phe Thr Asn Arg His Glu Val Arg Lys Met Thr Leu Asp Arg Ser

385 390 395

gag tac acc agc ctc atc ccc aac ctg agg aac gtg gtc gct ctg gac 38495

Glu Tyr Thr Ser Leu Ile Pro Asn Leu Arg Asn Val Val Ala Leu Asp

400 405 410

acg gag gtg gcc agc aat aga atc tac tgg tct gac ctg tcc cag aga 38543

Thr Glu Val Ala Ser Asn Arg Ile Tyr Trp Ser Asp Leu Ser Gln Arg

415 420 425

atg atc tgc ag gtgagcgctg cccctgcctg cagccttggc ccgcaggatgt 38594

Met Ile Cys se

430

gatgagggtt cctggcgctg atgccccttctt ctccctctgc ctcag c acc cag ctt 38649

r Thr Gln Leu

435

gac aga gcc cac ggc gtc tct tcc tat gac acc gtc atc agc aga gac 38697

Asp Arg Ala His Gly Val Ser Ser Tyr Asp Thr Val Ile Ser Arg Asp

440 445 450

015859-4.ST25.2008-12-10.SEQ LISTING

atc cag gcc ccc gac ggg ctg gct gtg gac tgg atc cac agc aac atc 38745
 Ile Gln Ala Pro Asp Gly Leu Ala Val Asp Trp Ile His Ser Asn Ile
 455 460 465
 tac tgg acc gac tct gtc ctg ggc act gtc tct gtt gcg gat acc aag 38793
 Tyr Trp Thr Asp Ser Val Leu Gly Thr Val Ser Val Ala Asp Thr Lys
 470 475 480
 ggc gtg aag agg aaa acg tta ttc agg gag aac ggc tcc aag cca agg 38841
 Gly Val Lys Arg Lys Thr Leu Phe Arg Glu Asn Gly Ser Lys Pro Arg
 485 490 495
 gcc atc gtg gtg gat cct gtt cat gg gtgcgtatcc acgacgctga 38887
 Ala Ile Val Val Asp Pro Val His gl
 500 505
 gggctgcaga gggaatggag ggagcaggaa ggagcttcag gaactggta gtggctggg 38947
 catggtggt caaagcacct gtaatccag cacttggga ggccaagggtg ggtggatcat 39007
 caagaccagc ctgaccaaca tggtaaaacc tcgtctctac taaaaataca aaaattagcc 39067
 ggggtgtgt gtggccacct gtaatcccag ctgcctggga ggctgaggca ggagaatcac 39127
 ttgaacctgg gagatggagg ttgcagttag ccaagacagc cccactgcac tccagcctgg 39187
 gtgacagagt gagactccgt ctcaaaaaaaaaaaaaaaaaa ctaaacaaaaa aactggtag 39247
 tggctagaca acaggatgtt atcttccaag cccatggctg actcagcagc tcctgggtca 39307
 agacactgtg acctgtgtcc cctggcagga agcatgc(cc) ctggcacctg cccgggtac 39367
 tctgtacctg tcaggtaga tctgtactt aagcacgtga gaggtggcat ttcacagtt 39427
 cagtgtgggt ctgacaaaccc gggacgcaca ctgccttgc agtacatac aggaggtgaa 39487
 tgggggttt ccagcagaga acactggaga aggcacactt ggtgtctgga agggaaaagc 39547
 agggaaagaga gcatcatcag atgcctgcgg gtgaaggtagg gcccgtatg gccagcgtcc 39607
 ctttttattt ttatattttt atttttttga gatggaaatct cgctctgtcg cccagactgt 39667
 agtgcagttgg tgcgtatcagc gtcactgtca agtccgcct cacagggtca cgccattctc 39727
 ctgcctcagc ctcccgagta gctggacta caggcacccg ccaccacgc cggtaattt 39787
 ttgcatttt tatttagagac ggggtttcac cgcgttagcc aggatggctt aatctctg 39847
 accctgtgt ccacccgcct cggcctccct aagtgttgg attacaagcg tgagccacca 39907
 cggccggccc cttttttttt ttatattttt tgagacggag ttcgtctgtc tgcccgagc 39967
 tagattgcag tggcgtgatc tcggctcaact gcagcctccg cctcccgat tcaagtgtt 40027
 ctcctgcctc aacccaaactt ctaatttagga ttacaagcat gtaccacat gcctgactaa 40087
 tttttgtat tttagttaga gactgggtt caccatgttg gctaggctgg ttcgtaccc 40147
 ttagcctcaa gtaatctgcc tgcctcagcc tcccaaacag cggggattac aggcacatgagc 40207
 cactgtgccc aacccaaaccc tggatctttt ttaaacaaga caatgtctgc tggccaca 40267
 gaacaatggg tgggttcatat gtggcccgat gtgtttggcc acataactgc caggccagag 40327
 ggaaagagac ttcgtactg ttcactca gataaaaaatg tggtgttgt gtgcgtgt 40387
 tctggctca tattttttt ttttgagaca ggggtgtcgct ctgtcactgtca gtctggatgt 40447
 cagtggcgcata atcagatgtc actgcagcc taaactcttgg cgtcgttgtt attctccac 40507
 ttccggccctt caagtagctg gaactacagg tgaacaccac tggcccgac taattttttt 40567
 tatttttagt agagatgagg ttcactatgttggccaggc tggcttgcac tcccttagct 40627
 caagcaatcc tcctgccttgc tctcccaaata gtcgtggat tacacgtgcg agccattgcg 40687
 catggctgtt gttctgtgt ttcttcctt ttcttcgag atggcgtctc agtctgcac 40747
 ccaggctgga gtgcgtgggt gtgtatcatag ctcactgttag cctcaacttc ctgggctcaa 40807
 gcaatccctc tgatttcagc ctccggcc tggccagcat ggtgaaaccc cgtctact 40867

015859-4.ST25.2008-12-10.SEQ LISTING

aaaaatacaa aaatgttagcc aggctgtgggt gtgggcgcct gtaatcccaag ctacaccaga 40927
ggctgaggca ggagaatcgc ttgagcctgg aagggtggagg ttgcagcaag ccaagatcg 40987
gccactgcac tccagcctgg gcaacagaga cagactctgt ctcaaaaaaaaaaaaa 41047
acccaaacaa gccacatttgggttgggg ttccagcag gactattcc caaggctgag 41107
cctggctgtt tcttccagaa ttctggcac gcattggctg ggatcctccc cgcgcctcca 41167
gcctcacagc tattctctgt cctccacca g c ttc atg tac tgg act gac tgg 41220
y Phe Met Tyr Trp Thr Asp Trp
510 515
41268
gga act ccc gcc aag atc aag aaa ggg ggc ctg aat ggt gtg gac atc
Gly Thr Pro Ala Lys Ile Lys Lys Gly Gly Leu Asn Gly Val Asp Ile
520 525 530
535 540 545
41316
tac tcg ctg gtg act gaa aac att cag tgg ccc aat ggc atc acc cta
Tyr Ser Leu Val Thr Glu Asn Ile Gln Trp Pro Asn Gly Ile Thr Leu
41367
g gtatgttcgc aggacagccg tcccagccag ggccgggcac aggctggagg
a
acagacgggg gttgccaggt ggctctggga caagccaaag ctgctccctg aaggttccc 41427
tccttcctt ctttgtttt ctctttttt agatgagggtc ttggctgtc acccaggctg 41487
gagtgcactg ggcgaatcg agctcactgc agcctccacc tccaggctc aagtgtac 41547
cctgcctcac cctcctgagt agctgagatt acagacacgt gccaccacgg cagactaatt 41607
ttattttatt ttgggaaga gacaaagtct ttttatgtt gcctggctgg tctcaaactc 41667
aggggtcaag cgatcctccc gcctcagcct tccaaactgc tggattaca ggcgtggcc 41727
accgtaccca gcctcctga agttttctg acctgcaact cccctacctg cccattggag 41787
agggcgtcac aggggagggg ttctggctca catgtgggtt gaggctgc tccagggtgt 41847
tttctgctag gtccctggca gggggcttc ctggccggag cagcgtggcc aggccctcag 41907
gaccctctgg gactggcatac agcacgtgac ctctccttat ccacttgtt gtctag 41963
at ctc ctc agt ggc cgc ctc tac tgg gtt gac tcc aaa ctt cac tcc 42010
sp Leu Leu Ser Gly Arg Leu Tyr Trp Val Asp Ser Lys Leu His Ser
550 555 560
42058
atc tca agc atc gat gtc aac ggg ggc aac cgg aag acc atc ttg gag
Ile Ser Ser Ile Asp Val Asn Gly Gly Asn Arg Lys Thr Ile Leu Glu
565 570 575
580 585 590
42103
gat gaa aag agg ctg gcc cac ccc ttc tcc ttg gcc gtc ttt gag
Asp Glu Lys Arg Leu Ala His Pro Phe Ser Leu Ala Val Phe Glu
42163
gtgtggctta cgtacgagat gcaagcactt aggtggcgga tagacacaga ctatagatca
ctcaagccaa gatgaacgca gaaaactgggt tttgtactagg aggaggctt agacctgagt 42223
tatttctatt ttcttcattt tttttttttt ttttttttgg acagagttt gctctcg 42283
cccaggctgg agggcaatgg catgatctcg gtcaccgcac acctccacctt cccagggttca 42343
agtgattctc ctgtctcagg ctccccaga gctgggattt caggcatgca ccaccacat 42403
gccccggctaa ttgttattttt ttagtagaga cggagtttccatgttggcgtt caggctggtc 42463
tcgaactccc gacccatgg gatctgcctg cctcgccctc cccaaagtgtt gggattacag 42523
acttgagcca cccggccca gatcttcattt tttttttttt tttttttttt 42583
ttcttaagaga caggatctca ctctgtcccc aggaggactt gcaatgttggcgtt gatcatagct 42643
cactgcagcc ttaaccctt gggctcaatg gatctccca cctcaggccctt ccaaggtagct 42703

015859-4.ST25.2008-12-10.SEQ LISTING

ggaactacag gtgcacacca ccatgccagg ctcattttt tattttttt tttttgaga 42763
 cagtcgtt ctgtcaccc ggctggatg cagtggata atctggctc actgcaacct 42823
 ctgcctcca ggtcaagcg attccctgc ctacgcctc tgagtagtt agattacagg 42883
 catgtgtgcc atcataccctg gctgatttt gtatttttt ttagagatgg ggtctcagta 42943
 tggaccag gttgtctta aactccggc ctaagtgtat cctccactt cagtcctcca 43003
 aagtgtggg attacaggca tgagccactg cggccgggtt gtttctttt tttttcggtt 43063
 tttggagac ggaattcac ctgtgtcc caggatggag tgcaatggca cgatatgcc 43123
 tcaccacaac ctctgcctcc tgggtcaaa ccatttcct gcctcagcct tccttagtagc 43183
 tgggattaca agcatgtgcc accacgccc gctgatttt tatttttagt agagatgggg 43243
 ttctccatg ttggccaggc tggtctcgaa ctccgtaccc caggtcattc gcccacctc 43303
 gcctccaaa gtgctggat tacaggcgtg agccaccgtg cccgggtt tttttttt 43363
 ttactgagag tcgtgaaagg cagtgtatcc ctgtcacatg tgatcttgc tcctaggga 43423
 catttggcaa ttcttagaga tttttgggtt gtcacaagtc aatggggaaactgactgtggca 43483
 ttttagtgggtt agaggctgtt gacgctgtt aacacccaga acaggaaagt agcaggccct 43543
 agatagagcc atcggtggaa aaccctgtc taagggaaatg ggcgttattttaaaccac 43603
 gttcctggca tgattacca cagccaaaag tggagtcccc ccaagtgtgt tcgtccattt 43663
 gcatgtcagt aaaggaatag ctgaggccgg gtaatttata aagaaaagag attaaactg 43723
 ggtatggcag tttatgccta taatcccaga acitggggag gctgaggcag gaggatcgct 43783
 tgagtccagg agtgtgagac cgagaccaggc ctggccaaaca tgacgaaact ctgtctcac 43843
 aaaaaataca aaaagttaggc caggcacgtt ggtcacgccc tgtaatccca gcactttggg 43903
 agggccgaggc gggcgatca cgaggtcagg agatcgagac catcctggct aacacgggt 43963
 aaccccgctt ctactaaaaaa tacaaaaaca aaattagccg ggtgtgggtt caggcgcctg 44023
 tagtcccaggc tactcgggag gctgaggcgg gagaatggcg tgaacccggg aggcggagct 44083
 tgcagtgtggc caagatcgcc ccactgcact ccagccctggg tgaccgagtt gagactccgt 44143
 ctcaaaaaaa aaaaaaaaaaaa aaaaaataca aaaagttagcc aggtgtgggtt gcaggcacct 44203
 gtaatcctgg gttctcgaga ccgaggcatg agaattgcct gacccaggaa ggtggaggct 44263
 gcagtgtggc aagatcatgc cactgcact cagccctggg gacagagtgg gactctgtt 44323
 caaaaaacaa caaaaaaaaaaa gttctggaaa tggatgggtt tgatgggtat acttccacaa 44383
 cagcgtgaat ctgcttaagg ccaccgaact gtgcactcac aaatagtgcgatggtacat 44443
 tttatgttat gtgtattca ccacaattaa aaacttagttt tggccagggt gtgggtgttc 44503
 atgcctgtta tcccagcact ttgggaggc agagggagggt ggatcatgag gtcagcgtt 44563
 cgagaccaggc caggccaaaca tggtaaaacc ccatctcac taaaaataca aaaattagcc 44623
 aggcgtgggtt gcacatgcct gtgtccctgg ctacttgaga ggctgaagca ggagaatcgc 44683
 ttgaacctgg gaggctaaga ttgcagtgtt ccgagatgtt gccactgcac tccagccctgg 44743
 acgacagagt gagacttcgtt ctcaaaaaaa aaaccaaaaaaa aaaaattagc tggatggcct 44803
 gcactgtggc tcacgcctgt aatcccagca ctggggaga ccgaggtagg tggatggcct 44863
 gaggtcagga gttcgaatcc agccctggca acatggtaa agcccgcttc tactaaaaat 44923
 acaaaaaattt agtcaggat gttggcacac ctgtatccc agtactcgg gaggctgaag 44983
 caagagaatc gtttgaaccc aggagggttga ctgtcagtg agccgagatt gggccactgt 45043
 actccagcctt gggcaacaaa agtggaaactc tgcgtaaac aaacaaacaa acaaacaac 45103
 agacaaacaa aaaaacttagt tggagaga ggggtggcctg tgcgtttaa 45163
 cgggatttgtt catctccctt gtcgcgttt tag gac aaa gta ttt tgg aca gat 45217

Asp Lys Val Phe Trp Thr Asp

595 600

45265

atc atc aac gaa gcc att ttc agt gcc aac cgc ctc aca ggt tcc gat

015859-4.ST25.2008-12-10.SEQ LISTING

Ile Ile Asn Glu Ala Ile Phe Ser Ala Asn Arg Leu Thr Gly Ser Asp
 605 610 615
 gtc aac ttg ttg gct gaa aac cta ctg tcc cca gag gat atg gtt ctc 45313
 Val Asn Leu Leu Ala Glu Asn Leu Leu Ser Pro Glu Asp Met Val Leu
 620 625 630
 ttc cac aac ctc acc cag cca aga g gtaagggtgg gtcagccca 45358
 Phe His Asn Leu Thr Gln Pro Arg g
 635 640
 cccccccaaac cttgaaacct ctttgtggaa actctgaaat gttctggaaa tttctgaaat 45418
 cttctggat agctgtat ctcgttcctg cctgtactcc gcttctctg ccccaag 45474
 ga gtg aac tgg tgt gag agg acc acc ctg agc aat ggc ggc tgc cag 45521
 ly Val Asn Trp Cys Glu Arg Thr Thr Leu Ser Asn Gly Gly Cys Gln
 645 650 655
 tat ctg tgc ctc cct gcc ccg cag atc aac ccc cac tcg ccc aag ttt 45569
 Tyr Leu Cys Leu Pro Ala Pro Gln Ile Asn Pro His Ser Pro Lys Phe
 660 665 670
 acc tgc gcc tgc ccg gac ggc atg ctg ctg gcc agg gac atg agg agc 45617
 Thr Cys Ala Cys Pro Asp Gly Met Leu Leu Ala Arg Asp Met Arg Ser
 675 680 685
 tgc ctc aca g gtgtggcaca cgccttgtt ctgcgttcctg tgtcctccaa 45667
 Cys Leu Thr g
 690
 ctggccctct ctgaggctct ctctgctcat ctgtcaaatg ggtacctcaa ggtcggtgt 45727
 aggactcatg agtcggata accatactt tcttggatgg acacatcagc accgggcttg 45787
 acatttaccc agtccccctt tcatgtccctg ttccctctt cccggcccccc tgaagaggtg 45847
 atctgatttc tgacaggagc cctgagggag gaaatggtcc ctttcttgc tttttttt 45907
 tctttttttt tttcttttgc gatttgctgt cacccagcct ggaatgcagt ggtccatct 45967
 tggctactg ctacctctcc cactgggttc aagcaattct cctgcctcag cctcccaagt 46027
 agctgggatt acaagcatgc gccaccatgc ctggctaagt ttgttatttt tagtacagac 46087
 agggtttctc catggggcc aggctggct tgaactccctg acctcaggtg atcctccac 46147
 ctctgcctcc cgaagtgcata cgattacagg catgagccac cgcgcctc cccctttgtt 46207
 gactttctc atcctctgag aaagtctcag ttgaggccag cacccctctc aagtgaattt 46267
 aatctccctt ttgaacaaca acaaataaca atatgaccca gacgtggtgg ctcacacctg 46327
 tggtcccaagc tactcggag gctgagggtgt gaggattgt tgagcccagg aggtcaaggc 46387
 tacagagagc tataatcaca ccactcact ccagcctggg ggacaaagtg aaaccctgtc 46447
 tgaaaaaaaaaaac aaaaaaaaaaaaaaa aaaggaaaaaa gaaacaatac gatcacaag tagatattca 46507
 tagtgttat ttctcgtact cttttttttt ttttttgagac ggagtcttgc 46567
 tctgttgccc aggctggagt gcagtggcac gatctggct cactgcagcc tctgcctccc 46627
 aggttcaagc gcttggctca ctgcacaccc cgcctccctg gttcaagcgc ttctctgccc 46687
 tcagccctcc cagtagctgg gactatagcc acgtcccaact acgcccagct aatttttgt 46747
 attttttagt agagatgggg ttctactatg ttagccagga tggctctcgat ctccctgac 46807
 cgtgatctgc ctgccttggg ctcccaaagt gttgggatata tgggcatgag ccactgcacc 46867
 tggccctttt tttttttttt ttgagatgg agtttcgctc ttgttgccttca ggctggagtg 46927
 caatgggttg atctcggctc actgcaaccc ctgcctccctg ggtcaagca attctcctgc 46987
 ctcagccctcc ctagtagctg ggattacagg cacctgcac cacgcctggc taattttgt 47047

015859-4.ST25,2008-12-10.SEQ LISTING

015859-4.ST25.2008-12-10.SEQ LISTING

tcgtgaactc tcaacccatcg gtgagccacc cgcctgagcc tcccaaagtg ctgggattac 49159
aggtgtgagc caccacgcct ggccttttt ttgagacaga gtctcgctc cgcccatgct 49219
gtactgcagt gacgcagtct gggctcaactg taacctccgc ttcccaggtt caagtgattc 49279
ttctgccgca gcctcccatg tagagtagct gggattacag gcacccgcca ccatgcctgg 49339
ctaattcttgc catttttagt agagatgggg ttcacagtg ttggccaggg tggctcaaa 49399
cttctgacccatct gcctgccttgc cccctgcca agtgcgggaa ttatagatgt 49459
gagccacccgc gcctggccta cagtttattc ttgggtggct cacacctgtt atctcagcac 49519
tttgggaggc caaggtggga gaatggcttgc agcccaggag ttcaagtcca gcctgggcaa 49579
catagcaaga ccctatcttactacaaaat aaataataaa taaactaattt tttttctt 49639
taaaacccaa ctattcaaca tggcaatgca atatattaaa aaaatttttt ttttttga 49699
aacggagttctcactgtca cccgggcttgc agtgcagtgttgc cccatcttgc gctcaactgca 49759
acccctgccttccagggttca agtgcatttccttgc cccctgagttgc gctgggatttca 49819
caggcaccca ccaccatacc cagctaataat ttttgtattttt tagtagaga tggggttca 49879
ctatgtggg caggctggc tggactcttgc gacctgttgc tctggccggatcggc 49939
ctcccaaaatgttgc tggggatttgc caggcatgttgc gccaccgttgc ccagccaaaaa ttttttattt 49999
tttattttttt tgggacacgg ttcactgttgc tacccttgc tggagtgttgc gatgtgttca 50059
atggctcaacttgc cccatcttgc cccctgggttgc ctcagggttgc ctttgccttgc 50119
gttagctggg actacaggca tggccacca cacccttgc tttttttttttagtag 50179
agacagggtt ttcactgttgc gcccttgc ttcagggttgc ctttgccttgc 50239
ccacccttgc ccccaaaatgttgc gtttgc tttttttttt tggccaggcc 50299
tggggcttca tggctgttatttgc cacaacacccat tggggaggc ttttttttttgc 50359
gtcaggagtttgc ctttgc ttttttttttgc 50419
caaaaatttttgc tggggc ttttttttttgc 50479
gtggagaatttgc gtttgc ttttttttttgc 50539
actccaggccatcttgc ctttgc ttttttttttgc 50599
ttttcaatc ttttttttttgc 50659
ttggagccat ttttttttttgc 50719
aaaatttttgc ttttttttttgc 50779
atattaaagg ttttttttttgc 50839
cgggagacccatcttgc ttttttttttgc 50899
atctcttgc ttttttttttgc 50959
gtcacacccatcttgc ttttttttttgc 51019
gagtttgc ttttttttttgc 51079
tagccaggccatcttgc ttttttttttgc 51139
atcgcttgc ttttttttttgc 51199
cctggaggccatcttgc ttttttttttgc 51259
cttaagctt ttttttttttgc 51319
ctcactgttgc ttttttttttgc 51379
ccaccaggccatcttgc ttttttttttgc 51439
caaacaacaaaatgttgc ttttttttttgc 51499
tttgggttcca gtttgc ttttttttttgc 51559
ctggggaggccatcttgc ttttttttttgc 51619
cttcacacccatcttgc ttttttttttgc 51579
attcatttttgc ttttttttttgc 51739
tggccctcaag ttttttttttgc 51799

015859-4.ST25.2008-12-10.SEQ LISTING

accgtgccta gctctagtgg acttggaaatg ttgccttgcc cagggccctt atgttgaatg 51859
 gcccagggtcc acttggatgg ttctgtacca aggttaaccc catcccataa tgcctgggac 51919
 agttgatgca ggacaatcag ctctgtgcc attcaacctc aggactgagc atgctgggca 51979
 ttgtggggtc cgaagggtgc tccctgtcc cttcaaaat accctcttt tccttcttc 52039
 tttttttt tttttttt tttagacgaa gtcttgctc gtggcccaag ctagagtgca 52099
 gtggtgcgat ctcaagtcctt cgcacacccctt gctccggg ttcaaggcgat tctctgcct 52159
 cagcctctg agtagctggg attacagggtc cccacccgca cagctggctt attttgtat 52219
 ttttagtaga gacaggggtt caccgtgtt gccaggctgg tcttgaactc ctgaccctag 52279
 gcaacctgcc cacctcagcc tcccaaagtg ctgggattac aggttgagc cactggccct 52339
 ggcctttttt tttttttt gagagggagt ctcactctgt tgcccaggct ggagtgcata 52399
 ggcgcgatct tgactcaacttccatt tcccggttc aagtgttctt cctccctcag 52459
 cctcccaagt agctgggatt acagggtcat gcccaccacgg ccagctaatt ttgtat 52519
 agtagagaca ggggttcaact atgttgcata tgctggctc aaactctgaa ctttaggtga 52579
 tctggccgc ttagctccc aaagtgttgg gattacagggt gtgagccacc gcggccagac 52639
 caaaatatgc tcatttaat aaaatgcaca agtaggttga caagaattt acctgcaacc 52699
 ttgtcaacca cctagaataa aagcctctgc agccctcccc taaagactca tcaatgtgag 52759
 gctcaagaac ctcttaggc tgggtcggt ggctcattt tggatccctt gcactttgga 52819
 aggctgaggc aggaggatctt ctggaggccaa ggagttcaag acaaggctgg gcaacatagc 52879
 cagacctctg tttctatccc ccacaaaaaaag aaccttctta aaccggaaatt gagtcctaca 52939
 acctcgataa ctcacaaata agcccggtgtt gcctctcaca gacttggaa gtttccaag 52999
 tgtccaggga gatgtgccag ggccttcctt gccgtgacca ccgtcctctg cctgctccat 53059
 ttcttgggttgg cttccctta gacctgggccc tcacttttgc ttctctctg cag ct ctg 53117
 la Leu
 750

ggc gac gtt gct ggc aga gga aat gag aag aag ccc agt agc gtg agg 53165
 Gly Asp Val Ala Gly Arg Gly Asn Glu Lys Lys Pro Ser Ser Val Arg

755 760 765

gct ctg tcc att gtc ctc ccc atc g gtaagcgcgg gccggcccc 53210
 Ala Leu Ser Ile Val Leu Pro Ile v

770 775

cagcgcccc caggtcacag ctcccgcta tggatcctcg tgccctggctg gttggccctg 53270
 ttcactttt ctccctggaca gggaaacagcc ccactgggtt cctttatcac cccacggcc 53330
 tctccggct tggggctgac agtgacaaga tcagacagct aagggggtcag atggaggatg 53390
 tggagctggg tccctgtctg tggatagcc tcaccggat ttgatgtgcct tctggggaaac 53450
 tggttccctt gcagggggctt gtgtggagag ggcgcgtcctc cctgcctcac ccatgctcat 53510
 cctaaactcggtt taccatcac atctctttt tccttttttca taaaatttttta agaaaaaaaga 53570
 aatttaattt ttgtggaga cagacttgc ctctgtcacc caggtggag tgcaatggca 53630
 ccatcatgcc tcgctgcagc ctcaatgtctt gggctcaagc gatcctcccc ctcagccctc 53690
 ctgagtagctt ggtcaagcc actatacccc acttccatt tcttaaaaag tcacaggccct 53750
 gtgtgtggctt aatccctggac agaaatctag aagaagtcag ctacttctgg ggcgtggctc 53810
 acccagtggg cttcaggtta gatatttctt atactttaga ggctgggtgtt ggtggcttat 53870
 gcctgtataatc ccagcactt gggaggctga agtgggtggaa ttgcctgggc tcaggagttc 53930
 gagaccaacc tggcaacat ggcggaaaccc tggatgttcaaa aaaggtacaa aaatttagctg 53990
 ggcaggtggc acgtgcctgtt ggtaccagctt acttggggc ctgaggcagg aggatcgctt 54050
 gaacctggga ggtcgaggtt gcagtgaact gagatcatgt cactgcactc cagcctgggt 54110

015859-4.ST25.2008-12-10.SEQ LISTING

acacagagaa accccgtctcaaaaaaaaaa aaagaaaagaa aaaaattcct atgcatacat 54170
 ttgcctctt tctgttgtt tggtttgaga tggagtctcg ctctgtcgcc caggctggag 54230
 tacagtggct caacctcgcc tcaactgcaac ctctgcctcc cgggttcaag caattctct 54290
 gcctcaggct cctgagtagc tgggactaca gcgcggccca ccatgcccag caatttttg 54350
 tatttttagt agagactgac tgggttcat catgtggcc aggctggct cgaactctg 54410
 acctcaatgat cgcggccct cagcctccca aaatgctggg attacaggcg tgagccacca 54470
 ggcggccaggcc gcaaggcgat ctctaaacaa acataaaaga ccaggagtca aggttatgg 54530
 acgatggcccg tggttcaact ccagccacgg agctgggtct ctggctcgg gggcagctgt 54590
 gtgacagagc gtgcctctcc ctacag tg ctc ctc gtc ttc ctt tgc ctg ggg 54642
 al Leu Leu Val Phe Leu Cys Leu Gly
 780
 gtc ttc ctt cta tgg aag aac tgg cgg ctt aag aac atc aac agc atc 54690
 Val Phe Leu Leu Trp Lys Asn Trp Arg Leu Lys Asn Ile Asn Ser Ile
 785 790 795 800
 aac ttt gac aac ccc gtc tat cag aag acc aca gag gat gag gtc cac 54738
 Asn Phe Asp Asn Pro Val Tyr Gln Lys Thr Thr Glu Asp Glu Val His
 805 810 815
 att tgc cac aac cag gac ggc tac agc tac ccc tcg gtgagtgacc 54784
 Ile Cys His Asn Gln Asp Gly Tyr Ser Tyr Pro Ser
 820 825
 ctctctagaa agccagagcc catggcggcc ccctccagc tggaggcata tgatcctaa 54844
 gggaccaggc cgaggcttcc ccagccctcc agatcgagga cagcattagg tgaatgcttc 54904
 tggcgctca ttcagaatgt cagcggacaa tggccttgtt ggttagagg aatgttgat 54964
 aagcaaataag agagctccat cagatggta cagggcaaag aaagtcaaaa ggagttcaga 55024
 ggcggggcgc ggtggctcat gcctgtaatc ccaggactt gggaggccga ggctggcgg 55084
 tcacactgaag tcaggagttt gagaccagct tggccatcat gacaaaaccc cgtctctatt 55144
 aaaaatacaa aaaattagcc aggcgtggga gtgggcgcct gtaatcccag ctactcgga 55204
 ggccgaggta gaaaaatgc ttgaacctag gaggcagagg ttgcagttag cgcagatgc 55264
 gccactgcat tccagcccg gaggcaagag caaaactcca tctcaaaaaa aaaaaaaaaa 55324
 ggagttcaga ggcccgcat ggtggttcac acatgtgatc ccagaacttg gggagggtga 55384
 ggcaggagaa tcacactgagc tcaagttca agaccagcct gggcagcaca gcaagacccc 55444
 atctctgcaaa aaaataaaaaa tttagccctg tgggttgatc agcgcctagt tccagctact 55504
 agggaggcta aggcaggagg attgcgttag gctaaggttag gagattgaga ctgcagtgc 55564
 ttgtgattgc gtcactgc tccagcctgg gtgacagagc aagccctgt ctctaaaaaa 55624
 aaaaaaaaaa ttcaaaagaag ggtttccaga gggccaggag ggaggaaggg agaggaggtg 55684
 ttttattttt ttgttttat ttttatttt gagacagagt ctctctgt caccaggat 55744
 ggagtgcagt gctgtgatct tggctactg caactctgc ctccctgggtt caagcaattc 55804
 ttatgcctca gcctcagct cctgagtagc tggattaca acactatgcc cggtaattt 55864
 ttgttattttt agtagagacg aggttcgccc atgttgccca gactggctc gaactctga 55924
 cctcaagtga tccacccggcc ttggcctccc cacgtgttgg gattgcaggc gtgagccact 55984
 ggcggccct tgatcttac acaaggggtt tagggtaggt agccctctc gaaccaggag 56044
 aacagcctgt gcgaaggccc tgaggctgga ccgtgcctgt tgggttgag gccgtttag 56104
 ctggagcaaa cagagagagg ggtaaaaagg caggaggcta ccaggcagggt tgcagacgc 56164
 ctgtggcc actggggagg actttggctt ttggccttag agcgggtggga atgtactgaa 56224
 tccggtaatc accgtctccc tctggcggct cctgggggaa catgcttggg gatcaggctg 56284

015859-4.ST25.2008-12-10.SEQ LISTING

ggggaggctg ccaggcccag gaggtgagaa gtaggtggcc tccagccgtg ttcctgaaat 56344
gctggactga tagttccgc ttttaccat ttgtggcag aga cag atg gtc agt 56399

Arg Gln Met Val Ser
830

ctg gag gat gac gtc gcg tgaacatctg cctggagtcc cgtccctgcc 56447

Leu Glu Asp Asp Val Ala

835 839

cagaaccctt cctgagaccc cgcggccctt gtttattca aagacagaga agaccaaagc 56507
attgcctgcc agagcttgc ttatataatt tattcatctg ggaggcagaa caggctcgg 56567
acagtgcaca tgcaatggct tgggtggga ttgggtttc ttcccttcgtgaaggat 56627
aagagaaaca gccccgggg gaccaggatg acacccat ttctctccag gaagtttga 56687
gttctctcc accgtgacac aatcctaaa catggaagat gaaaggggag gggatgtcag 56747
gcccagagaa gcaagtggct tcaacacac aacagcagat ggcaccaacg ggacccctg 56807
gcctgcctc atccaccaat cttaagccaa accccctaa ctcaggagtc aacgtgtta 56867
cctctctat gcaaggccctg cttagacagcc aggttagcct ttgcctgtc acccccaat 56927
catgaccaccc ccaatgtctt tcgagggtggg ttgttaccc ttcttaagccaa ggaaagggat 56987
tcatggcgtc ggaaatgatc tggctgaatc cgtggtggca ccgagaccaa actcattcac 57047
caaatgatgc cactcccag aggcagagcc tgagtcactg gtcacccctt atatttata 57107
agtgcctgag acacccgggtt accttggccg tgaggacacg tggcctgcac ccaggtgtgg 57167
ctgtcaggac accagccctgg tggccatcc cccgacccctt acccacttcc attccctgtt 57227
tctccttgca ctttctcagt tcagagttgt acactgtgtt cattggcat ttgtgttatt 57287
atttgcact gtttctgtc gtgtgttgc ggatggatc ccaggccagg gaaagcccgt 57347
gtcaatgaaat gcccggaca gagaggggca ggttggccgg gacttcaaag ccgtgtatcgt 57404
gaatatcgag aactggcatt gtgttgcattt tgccggccca cctagtgtt ccacttctat 57467
gcaaatgcctt ccaaggccatt cacttccca atctgtcgt tgatgggtat ttgtttaaaa 57527
catgcacggt gaggccgggc gcagtggtc acgcctgtaa tccacactt ttgggaggcc 57587
gaggccgggtg gatcatgagg tcaggagatc gagaccatcc tggctaacac gtgaaacccc 57647
gtctctacta aaaatacaaa aaattagccg ggcgtgggtt cggccacccgt tagtcccacg 57707
tactcggggag gctgaggcag gagaatgggt tgaacccggg aagcggagct tgcaatgtc 57767
cgagattgcg ccactgcgtt ccgcgtctg gcctggccgaa cagagcgtt ccctggccag 57827
aaaaaaaaaaaa acaaaaaaaaa accatgcattt gtgcatttgcg agcccatggc ctctggccag 57887
gcatggcgtt gctgagggtgg gaggatggtt tgagtcagg catttgggc tgcgtgtt 57947
tatgattatg ccactgcattt ccagccctggg caacatgttta agacccatc tttaaaaaaa 58007
tgaatttggc cagacacagg tggccatcgc ctgtatccc agcacttgg gaggctgtt 58067
tggatcattt gagttcaggat gttggagacc aggcctgtt gcaacatgcg gatccatct 58127
ctacaaaaaaac caaaaatgtt aaaaatcgatc gggtacgggtt gcacgtgcctt gtgtatcccag 58187
ctacttgggaa ggctgaggca ggaggatgcg ctgagccctt gagggtggagg ttgcgtgtt 58247
ccatgttgcg cccactgcac tccagccctgg gcaacatgcg aagaccctat ttcaaaaata 58307
caactataaa aaaataaaata aatcctccat tctggatgtt tggacgggac ttcaaggatct 58367
ttctgaaatc ggcgtttac tggctgttgcactt atgtccggag agacagtgc agcctccgtc 58427
agactcccccgtt gtaatgttgcactt tggcaatgtt ccccaaggatc gaaaactgt 58487
gtccccccca gtgcaggaa ccgtgataag ctttctgtt ttggagccac gtaatgttgcgt 58547
ccctgtacag atagttgggaa tttttgcactt ttgtatattt gttgaaactgt 58607
ttatcactt tataatataata tatacacaca tataataaa atctattat tttgcaaaac 58667
cctgggttgcgtt gtatttgcactt atgtactt ccggggccccc tggtagggg gttattgcct 58727

015859-4.ST25.2008-12-10.SEQ LISTING

ctgaaatgcc tcttctttat gtacaaagat tattgcacg aactggactg tggcaacgc 58787
ttttgggag aatgtatgtcc ccgttgtatg tatgagtggc ttctgggaga tgggtgtcac 58847
tttttaaacc actgtataga aggttttgc agcctgaatg tcttactgtg atcaattaa 58907
tttcttaaat gaaccaattt gtctaaactc gatgcacgtt ctctgtcg cgcgttctt 58967
tttgtttttt ttttttcct gagatggagc ctggctctgt caccctggc tggagtgcag 59027
tggcatgatc tcggctact gcaagctccg cctcccagg tcaagcaattt ctcctgcctc 59087
agcctcccta gtagcttagga ttacagggtga gtgccaccac gcctggccaa tttttttt 59147
ttttttttt ttgagacaga gtctcgctc gtcaagctctgt ctcaccagg ctggagtgcag 59207
ctcggctcac tgcaagctctgt ctcaccagg ttaatgccat tctcctgtc cagcctccctg 59267
agtagctggg gccacaggcg ctggccacca cggccggcta atttttttt gtacttctt 59327
tagtacagac ggggtttcac catgttagcc aggtatggctc cgatctccctg accttgtat 59387
ccacctgcctt cggccctccca aagtgcgttag attacaggcg tgagccaccg cgggtggcca 59447
acgctaattt ttttggggat ttagatggag tcttgcctg tcggccaggc tggagtgcag 59507
tggcgtgatc tctgcctact gcaagctccg ctcaccagg tcatgcctt ctccgcctc 59567
agcctcccta gtaactggga ctacaggcac cggccaccac gcccggctaa tttttgtat 59627
tttagtaga gacagggtttt caccgttta gccaggatgg tcttgcctc ctgaccctgt 59687
gatccaccccg tctcggccctc ccaaagtgcgtt gggatttagag gtgtgagcca ccacacctgg 59747
cctagcctgg ctaattttt tattttgggt agagacgggg ttcaccatg ttggtcaggc 59807
tggcttgaa cttctgaccc tggtaatct gcctgcctca gtctcccaa 59867
tacaggtgtg agccaccgcg ctggccctca ctccctctg tcatctgtt gtggattgg 59927
ctcccccagga gaaggaccacca gaaggggaag actcccaatccaa ctccggccaa gatgcaatct 59987
ccgtgggctcca 60000

<210> 2
<211> 24
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex1F
<400>
cacattgaaa tgctgttaat gacg

24

<210> 3
<211> 24
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex1R
<400>
ctattctggc gcctggagca agcc

24

<210> 4
<211> 24

015859-4.ST25.2008-12-10.SEQ LISTING

<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex2F
<400>
ttgagagacc ctttctcctt ttcc

24

<210> 5
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex2R
<400>
gcatatcatg cccaaagggg

20

<210> 6
<211> 24
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex3F
<400>
ttccttgag tgacagttca atcc

24

<210> 7
<211> 24
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex3R
<400>
gataggctca atagcaaagg cagg

24

<210> 8
<211> 24
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Mut191-2F

015859-4.ST25.2008-12-10.SEQ LISTING

<400>
acagttcaat cctgtctctt ctct

24

<210> 9
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex4AF
<400>
gtggtctcg ccatccatcc

20

<210> 10
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex4ARF
<400>
agccatcttc gcagtcgggg

20

<210> 11
<211> 22
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Mut 509insCR
<400>
cgagccatct tcgcagtcgg ag

22

<210> 12
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex4BF
<400>
ccccccagctg tgggcctgcg

20

<210> 13
<211> 20

015859-4.ST25.2008-12-10.SEQ LISTING

<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex4BR
<400>
cgccccacc ctgccccgcc

20

<210> 14
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex6F
<400>
tcctccttcc tctctctggc

20

<210> 15
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex6R
<400>
tctgcaaggcc gcctgcacccg

20

<210> 16
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> MutC255GF
<400>
ctctggctctc acagtgacac gc

23

<210> 17
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide

015859-4.ST25.2008-12-10.SEQ LISTING

<223> Mut E291XR

<400>

gcaccgagac tcaccgcaat

20

<210> 18

<211> 20

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> Ex7F

<400>

ggcgaaggga tggtagggg

20

<210> 19

<211> 20

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> Ex7R

<400>

gttgccatgt caggaagcgc

20

<210> 20

<211> 20

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> Ex9F

<400>

ccctgacct cgctccccgg

20

<210> 21

<211> 20

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> Ex9R

<400>

gctgcaggca gggcgacgc

20

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 22
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex10F
<400>
atgcccttct ctcctcctgc

20

<210> 23
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex10R
<400>
agccctcagc gtcgtggata

20

<210> 24
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Mut1432delGF
<400>
gggacatcca ggccccggcc

20

<210> 25
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex11F
<400>
tcctcccccg ccctccagcc

20

<210> 26
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> Ex11R

<400>

gctgggacgg ctgtcctgcg

20

<210> 27

<211> 20

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> Ex13F

<400>

gtcatttcc ttgctgcctg

20

<210> 28

<211> 30

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> Ex13R

<400>

ttccacaagg aggttcaag gttggggggg

30

<210> 29

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> MutH635NR

<400>

acctcttggc tgggtcaggt tct

23

<210> 30

<211> 20

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> Ex14F

<400>

aaatttctgg aatcttctgg

20

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 31
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex14R
<400>
gcagagagag gctcaggagg

20

<210> 32
<211> 22
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex15F
<400>
gaagggcctg cagcacgtgg ca

22

<210> 33
<211> 19
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex15R
<400>
tagggagggc ccagtctt

19

<210> 34
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> Ex17F
<400>
gggtctctgg tctcgggggc

20

<210> 35
<211> 22
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> Ex17R

<400>

ggctctggct ttctagagag gg

22

<210> 36

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

cgggtcggga cactgcctgg cag

23

<210> 37

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

cgggtcggga ccctgcctgg cag

23

<210> 38

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctgccaggca gtgtcccgac ccg

23

<210> 39

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

015859-4.ST25.2008-12-10.SEQ LISTING

ctgccaggca gggtcccgac ccg

23

<210> 40

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

atgcattcc cgtcttggca ctg

23

<210> 41

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gatgcatttc cctcttggca ctg

23

<210> 42

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gatgcatttc ccgtcttggc actgg

25

<210> 43

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

agatgcattt ccctcttggc actgg

25

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 44
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgtctttct gttagtgtctg tcacc 25

<210> 45
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gtctttctg tctgtgtctg tcacc 25

<210> 46
<211> 27
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ctgtctttc tgttagtgtct gtcacct 27

<210> 47
<211> 27
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgtctttct gtctgtgtct gtcacct 27

<210> 48
<211> 23

015859-4.ST25.2008-12-10.SEQ LISTING

<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggccgtgtca accgctgcat tcc

23

<210> 49
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gccgtgtcaa ccgctgcatt c

21

<210> 50
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
aggaatgcag cgtttgacac ggccc

25

<210> 51
<211> 27
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gaggaatgca gcgttgaca cggcccc

27

<210> 52
<211> 23
<212> polynucleotide
<213> artificial sequence

015859-4.ST25.2008-12-10.SEQ LISTING

<220>
<221> oligonucleotide
<223> probe
<400>
agctgtgggg gccgtgtcaa ccg

23

<210> 53
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
agctgtgggg gcgtgtcaac cgc

23

<210> 54
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cggttgacac ggcccccaca gct

23

<210> 55
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcggttgaca cgcccccaca gct

23

<210> 56
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide

015859-4.ST25.2008-12-10.SEQ LISTING

<223> probe
<400>
caaggctgtc gtaagtgtgg c

21

<210> 57
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcaaggctgt cgtaagtgtg gcc

23

<210> 58
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
caaggctgtc gttaagtgtg gcc

23

<210> 59
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
aaggctgtcg ttaagtgtgg c

21

<210> 60
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>

gacaacgacc ccgactgcga agatg

25

<210> 61
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gacaacgacc cccgactgcg aagat

25

<210> 62
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
acaacgaccc cgactgcgaa gat

23

<210> 63
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
acaacgaccc ccgactgcga aga

23

<210> 64
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcggccactc atccgagcca tct

23

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 65
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcggccactc acccgagcca tct 23

<210> 66
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgcgccact catccgagcc atctt 25

<210> 67
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgcggccact cacccgagcc atctt 25

<210> 68
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ccagctggcg ctgtgatggc ggc 23

<210> 69

015859-4.ST25.2008-12-10.SEQ LISTING

<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ccagctggcg ccgtgatggt ggc

23

<210> 70
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tccagctggc gctgtgatgg tggcc

25

<210> 71
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tccagctggc gccgtgatgg tggcc

25

<210> 72
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ctgcaaggac aaatctgacg aggaa

25

<210> 73
<211> 25
<212> polynucleotide

015859-4.ST25.2008-12-10.SEQ LISTING

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctgcaaggac aactgcggta tggc

25

<210> 74

<211> 27

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

actgcaagga caaatctgac gaggaaa

27

<210> 75

<211> 27

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

actgcaagga caactgcggat atggcg

27

<210> 76

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

caaatctgac gaggaaaact gcggat

25

<210> 77

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

caaatctgac gacaaatctg acgag

25

<210> 78

<211> 27

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

acaaaatctga cgagggaaac tgcggt

27

<210> 79

<211> 27

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

acaaaatctga cgacaaatct gacgagg

27

<210> 80

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gggtccctcg cagagtgtca ctg

23

<210> 81

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

015859-4.ST25.2008-12-10.SEQ LISTING

<400>
gggtccctcg ccgagtgtca ctg

23

<210> 82
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgggtccctc gcagagtgct actgt

25

<210> 83
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgggtccctc gccgagtgtc actgt

25

<210> 84
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
aacccatcaa agagtgcggt gag

23

<210> 85
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
aacccatcaa atagtgcggt gag

23

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 86
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gaacccatca aagagtgcgg tgagt

25

<210> 87
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gaacccatca aatagtgcgg tgagt

25

<210> 88
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tcactctcg ggccctacca

20

<210> 89
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tcactctcg ggccctacca a

21

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 90
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cactctcggg cccctaccc 20

<210> 91
<211> 19
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cactctcgga cccctaccc 19

<210> 92
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
acgagtgcct gtgcggcgac ggctt 25

<210> 93
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
acgagtgcct gtacggcgac ggctt 25

<210> 94
<211> 23

015859-4.ST25.2008-12-10.SEQ LISTING

<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cgagtgcctg tgcgccgacg gct

23

<210> 95
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cgagtgcctg tacgccgacg gct

23

<210> 96
<211> 24
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcgaagatgc gaaggtgatt ccgg

24

<210> 97
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggcccgacga agattccgg gtggg

25

<210> 98
<211> 27
<212> polynucleotide
<213> artificial sequence

015859-4.ST25.2008-12-10.SEQ LISTING

<220>
<221> oligonucleotide
<223> probe
<400>
agcgaagatg cgaaggtgat ttccggg

27

<210> 99
<211> 27
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tggcccagcg aagatttccg ggtggga

27

<210> 100
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgaagaagag gtaggcgatg g

21

<210> 101
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cggttggta agacgatgga g

21

<210> 102
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide

015859-4.ST25.2008-12-10.SEQ LISTING

<223> probe
<400>
gtgaagaaga ggttaggcgat gga

23

<210> 103
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ccggttgggt aagacgatgg agc

23

<210> 104
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ctccatcgcc tacctttct tcacc

25

<210> 105
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ctccatcgcc taactttct tcacc

25

<210> 106
<211> 27
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>

gctccatcg c t a c c t c t c ttcacca

<210> 107

<211> 27

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gctccatcg c t a a c t c t c ttcacca

<210> 108

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

tgccgggtgg tgaagaagag gtagg

<210> 109

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gtgccgggttg gtgagaagag gtagg

<210> 110

<211> 27

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gtgccgggttg gtgagaaga ggtaggc

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 111	
<211> 27	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide	
<223> probe	
<400>	
cgtgccggtt ggtgagaaga ggttaggc	27
<210> 112	
<211> 25	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide	
<223> probe	
<400>	
caatagaatc tactggtctg acctg	25
<210> 113	
<211> 25	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide	
<223> probe	
<400>	
caatagaatc tagtggtctg acctg	25
<210> 114	
<211> 27	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide	
<223> probe	
<400>	
gcaatagaat ctactggtct gacctgt	27
<210> 115	

015859-4.ST25.2008-12-10.SEQ LISTING

<211> 27
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcaatagaat ctatgggtct gacctgt 27

<210> 116
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggcccccggac gggctggctg tggac 25

<210> 117
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggcccccggac ggctggctgt ggact 25

<210> 118
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gtccacagcc agcccggtcg gggcc 25

<210> 119
<211> 25
<212> polynucleotide

015859-4.ST25.2008-12-10.SEQ LISTING

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

agtccacagc cagccgtcgg gggcc

25

<210> 120

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gcgggagttc cccagtcagt ccagt

25

<210> 121

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gcgggagttc cctagtcagt ccagt

25

<210> 122

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

cgggagttcc ccagtcagtc cag

23

<210> 123

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

cgggagttcc ctatgcgtc cag

23

<210> 124

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctgtcccccag aggtatggc tctct

25

<210> 125

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctgtcccccag agaatatggc tctct

25

<210> 126

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

tgtcccccaga ggatatggc tct

23

<210> 127

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

015859-4.ST25.2008-12-10.SEQ LISTING

<400>
tgtccccaga gaatatgggtt ctc

23

<210> 128
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tggttctctt ccacaacctc acc

23

<210> 129
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tggttctctt caacaacctc acc

23

<210> 130
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
atggttctct tccacaacctt caccc

25

<210> 131
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
atggttctct tcaacaacctt caccc

25

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 132
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gctgacctt agcctgacgg tggat

25

<210> 133
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
agctgacctt tagctgacgg tggat

25

<210> 134
<211> 27
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
agctgacctt tagcctgacg gtggatg

27

<210> 135
<211> 27
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gagctgacct ttagctgacg gtggatg

27

<210> 136

015859-4.ST25.2008-12-10.SEQ LISTING

<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<40>
tgctcctcg tttcccttgc ctg 23

<210> 137
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgctcctcgg ggtcttgcc tgg 23

<210> 138
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gtgctcctcg tttcccttgc cctgg 25

<210> 139
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gtgctcctcg gggctttgc ctggg 25

<210> 140
<211> 25
<212> polynucleotide

015859-4.ST25.2008-12-10.SEQ LISTING

<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gactcacagc acgttcctg ggact 25

<210> 141
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gactcacagc acattcctg ggact 25

<210> 142
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
actcacagca cgttcctgg gac 23

<210> 143
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
actcacagca cattcctgg gac 23

<210> 144
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>

015859-4.ST25.2008-12-10.SEQ LISTING

ccatcggtggc agcgaaactc gtc

23

<210> 145
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
atgcacttcc cacgtcctgg gag

23

<210> 146
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
catcggtggca gcgaaactcg t

21

<210> 147
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgcaacttccc acgtcctggg a

21

<210> 148
<211> 20
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide Ex8F
<223> primer
<400>
cattggggaa gagcctcccc

20

<210> 149
<211> 20

015859-4.ST25.2008-12-10.SEQ LISTING

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide Ex8R

<223> primer

<400>

gcctgcaagg ggtgaggccg

20

<210> 150

<211> 20

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide Ex12F

<223> primer

<400>

actggcatca gcacgtgacc

20

<210> 151

<211> 20

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide Ex12R

<223> primer

<400>

cgtgtgtcta tccggccacc

20

<210> 152

<211> 20

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide Ex16F

<223> primer

<400>

gcgctttcct gccgtgacca

20

<210> 153

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide Ex16R

015859-4.ST25.2008-12-10.SEQ LISTING

<223> primer	
<400>	
cctgtccagg agaaaaagtg aac	23
<210> 154	
<211> 23	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide MutI771TF	
<223> primer	
<400>	
cagtagcgtg agggctctgt caa	23
<210> 155	
<211> 19	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide Mut2389+4A>GR	
<223> primer	
<400>	
ctgggggacc ggccggcgc	19
<210> 156	
<211> 23	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide	
<223> probe	
<400>	
tgtcaagctg ggtgctgagg cag	23
<210> 157	
<211> 23	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide	
<223> probe	
<400>	
tgtcaagctg gttgctgagg cag	23

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 158
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gtcaagctgg gtgctgaggc a

21

<210> 159
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gtcaagctgg ttgctgaggc a

21

<210> 160
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggtccctcgc agagtgtcac tgt

23

<210> 161
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggtccctcgc actgtgagag cca

23

<210> 162
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

gtccctcgca gagtgtcact g

21

<210> 163

<211> 21

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gtccctcgca ctgtgagagc c

21

<210> 164

<211> 21

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ccgtcgaaaa cctggatgtc t

21

<210> 165

<211> 21

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ccgtcgaaaa tctggatgtc t

21

<210> 166

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ccgtcgaaaa gcctggatgt ctc

23

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 167
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcccgtcggg gtctggatgt ctc 23

<210> 168
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ccggttggtg aagaagaggt aggcg 25

<210> 169
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cggttggta agaaagaggt aggcg 25

<210> 170
<211> 27
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gccgggtggta gaagaagagg taggcga 27

<210> 171
<211> 27
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

ccggttggtg aagaaagagg taggcga

27

<210> 172

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

actggaagct ggcgggacca cag

23

<210> 173

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gcacttggaaag ctgggaccac agg

23

<210> 174

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctgtggtccc gccagcttcc agt

23

<210> 175

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

cctgtggtcc cagcttccag tgc

23

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 176
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcgggagttc cccagtcagt c

21

<210> 177
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcgggagttc accagtcagt c

21

<210> 178
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggcgggagtt cccagtcag tcc

23

<210> 179
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggcgggagtt caccagtcag tcc

23

<210> 180
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

ccccatcggt aagcgcgggc cgg

23

<210> 181

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ccccatcggt aggcgcgggc cgg

23

<210> 182

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ccggcccgcg cttaccgatg ggg

23

<210> 183

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ccggcccgcg cctaccgatg ggg

23

<210> 184

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gaaaagaggc tggcccaccc ctt

23

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 185
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<40
gaaaagaggc ttcccttgg ccg

23

<210> 186
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
aaaagaggct ggcccacccc t

21

<210> 187
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
aaaagaggct ttccttggc c

21

<210> 188
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cgccctcccg tgctcaccca cagcc

25

<210> 189
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

cgcctcccg tggcaccca cagcc

25

<210> 190

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ggctgtgggt gagcacggga aggcg

25

<210> 191

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ggctgtgggt gaccacggga aggcg

25

<210> 192

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

actatctcca ccgtggtag cccag

25

<210> 193

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

actatctcca ccatggtag cccag

25

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 194
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ctgggctcac cacggtgag atagt 25

<210> 195
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ctgggctcac catggtgag atagt 25

<210> 196
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gggctctgtc cattgtccctc cccat 25

<210> 197
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gggctctgtc cactgtccctc cccat 25

<210> 198
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide
<223> probe
<400>
atggggagga caatggacag agccc 25

<210> 199
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
atggggagga cagtggacag agccc 25

<210> 200
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgcaacatgg ctagagactg ccggg 25

<210> 201
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgcaacatgg ctggagactg ccggg 25

<210> 202
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcaacatggc tagagactgc cg 23

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 203
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gcaacatggc tggagactgc cgg 23

<210> 204
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgctgatgac ggtgtcatag gaa 23

<210> 205
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tgctgatgac gatgtcatag gaa 23

<210> 206
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gctgatgacg gtgtcatagg a 21

<210> 207
<211> 21
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

gctgatgacg atgtcatagg a

21

<210> 208

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

tccaaacttc actccatctc aag

23

<210> 209

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

tccaaacttc agtccatctc aag

23

<210> 210

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctttagatgg agtgaagttt gga

23

<210> 211

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctttagatgg actgaagttt gga

23

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 212
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gccaagtgg a ctgcgacaac ggctc 25

<210> 213
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gccaagtgg a ctacgacaac ggctc 25

<210> 214
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gagccgttgt cgcagtccac ttggc 25

<210> 215
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gagccgttgt cgttagtccac ttggc 25

<210> 216
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

ctgctggcca gggacatgag gagct

25

<210> 217

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctgctggcca ggtacatgag gagct

25

<210> 218

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

agctccatgtccctggcc agcag

25

<210> 219

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

agctccatgtacctggcc agcag

25

<210> 220

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctcgccgcgg cggggactgc aggtta

25

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 221
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ctcgccgcgg cgaggactgc aggtta 25

<210> 222
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tacctgcagt ccccgccgcg gcgag 25

<210> 223
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tacctgcagt cctcgccgcg gcgag 25

<210> 224
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gaccatctg gaggatgaaa agagg 25

<210> 225
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

gaccatcttg gacgatgaaa agagg

25

<210> 226

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

cctctttca tcctccaaga tggtc

25

<210> 227

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

cctctttca tcgtccaaga tggtc

25

<210> 228

<211> 27

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gtttcctcg tcagattgt ccttgca

27

<210> 229

<211> 27

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gtttcctcg tcacattgt ccttgca

27

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 230
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tttcctcg t cagatttgc cttgc

25

<210> 231
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tttcctcg t cacatttgc cttgc

25

<210> 232
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ttgtccttgc a gtcggggcc acta

25

<210> 233
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ttgtccttgc a gacggggcc accat

25

<210> 234
<211> 23
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

tgtccttgca gtcggggcca cca

23

<210> 235

<211> 23

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

tgtccttgca gacggggcca cca

23

<210> 236

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

agcccagtag cgtgagggt ctgtc

25

<210> 237

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

agcccagtag cgagaggct ctgtc

25

<210> 238

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

gacagagccc tcacgctact gggct

25

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 239
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
gacagagccc tctcgctact gggct 25

<210> 240
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tcgccttgc cctcgccgcg gcggg 25

<210> 241
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
tcgccttgc ccccgccgcg gcggg 25

<210> 242
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cccgccgcgg cgaggagcaa ggcga 25

<210> 243
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

cccgccgccc cggggagcaa ggcga

25

<210> 244

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

acggctacag ctaccctcg gtgag

25

<210> 245

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

cggctacagc tacccctcg gtgag

25

<210> 246

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctcaccgagg ggtagctgtt gccgt

25

<210> 247

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctcaccgagg gggtagctgtt agccgt

25

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 248
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cccaggagac gtgctgtgag tcccc 25

<210> 249
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
cccaggagac gtactgtgag tcccc 25

<210> 250
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggggactcac agcacgtctc ctggg 25

<210> 251
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>
<221> oligonucleotide
<223> probe
<400>
ggggactcac agtacgtctc ctggg 25

<210> 252
<211> 25
<212> polynucleotide
<213> artificial sequence
<220>

015859-4.ST25.2008-12-10.SEQ LISTING

<221> oligonucleotide

<223> probe

<400>

ctccccatcg gtaagcgccgg gccgg

25

<210> 253

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ctccccatcg gtcagcgccgg gccgg

25

<210> 254

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ccggcccgcg cttaccgatg gggag

25

<210> 255

<211> 25

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ccggcccgcg ctgaccgatg gggag

25

<210> 256

<211> 24

<212> polynucleotide

<213> artificial sequence

<220>

<221> oligonucleotide

<223> probe

<400>

ccagtacatg aagctgggtgg gaga

24

015859-4.ST25.2008-12-10.SEQ LISTING

<210> 257	
<211> 25	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide	
<223> probe	
<400>	
tcttgatctt ggcctgggga cagag	25
<210> 258	
<211> 23	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide	
<223> probe	
<400>	
cagtagatga agctgggtggg agg	23
<210> 259	
<211> 23	
<212> polynucleotide	
<213> artificial sequence	
<220>	
<221> oligonucleotide	
<223> probe	
<400>	
cttgatcttgcctggggac aga	23